5-1973

Net Migration as a Factor Affecting Metropolitan Growth in Utah: 1950 to 1970

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NET MIGRATION AS A FACTOR AFFECTING METROPOLITAN GROWTH IN UTAH: 1950 TO 1970

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Sociology

ACKNOWLEDGMENT

I am grateful to my supervisory committee, Dr. Yun Kim, Dr. T. R. Black, Dr. H. B. Bylund, Dr. S. A. Albrecht, and Dr. G. Hanson, for their professional assistance.

I extend my deepest appreciation to Dr. Yun Kim, under whose guidance this study was undertaken. I desire to express my sincere appreciation for his counsel, guidance, and assistance.

A note of thanks to my friends and colleagues, Brad Parlin, Marty Zusman, Warren Lucas, and Jim Beck.

Typists and readers to whom I owe thanks are: Debby Winkler and Anita Sweeney.

A broader note of appreciation and gratitude to my parents Jalal and Mariam M. Mahmoudi for their continued support, encouragement, and inspiration all through my studies.

Finally, a husband's gratitude and many thanks to Nellie for her patience, encouragement and thoughtful criticism of this manuscript.

I bear all responsibility for any shortcomings in this study.

Kooros Mohit Mahmoudi

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by

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Utah State University, 1973

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The objectives of this study were to measure net in- or out-migration to or from the Standard Metropolitan Areas of Utah between 1950-60 and 1960-70, and to study selected socio-economic factors relating to migration and the growth of SMSA's. Specifically, the factors of migration and natural population increase were central in an analysis of population redistribution. Selected demographic characteristics of the migrants such as sex and age were also studied to establish their impact upon the SMSA population structure. The relationship between population change in the SMSA's and economic factors of labor force supply and employment were also reviewed.

Net intercensal migration for the SMSA's of Ogden, Provo-Orem, and Salt Lake City were derived through indirect methods of estimating net migration: The Census Survival Ratio Method and the Life Table Survival Ratio Method.

An analysis of the findings indicated that most migrants were in the younger age groups of 20-34 years and females outnumbered the males in the migrating population. These trends held for all three SMSA's throughout the 1950-60 and 1960-70 period.

It also appears that net migration has played an important part in the process of metropolitanization in the state. About 25.14 percent of the Salt Lake SMSA growth between 1950-60, and 17.15 percent between 1960-70 was due to net migration. However, Provo-Orem SMSA's growth through net migration was -.08 for 1950-60, but it was 34.07 percent for the 1960-70 period. Ogden SMSA's growth due to net migration was estimated at 10.56 percent for the 1950-60 period and -19.73 percent for the 1960-70 decade.

By correlating the amount of net in- or out-migration in the labor force population and the amount of unemployment, it was found that the net-migration figures were sensitive to the amount of unemployment in the labor force in each SMSA. There seemed to be an inverse relationship between the number of unemployed and the amount of in-migration.

The results, indicating the amount of intercensal net migration for SMSA's in Utah between 1950 and 1970, for the first time, demonstrated the components of population change for these metropolitan areas. Knowledge of population change due to net migration will be useful in population projections for these areas, thus, facilitating socio-economic planning for years to come.

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INTRODUCTION

Nature of Population Change

This is a study of population redistribution in Utah. Specifically, a study of population change and redistribution in relation to the development of the state's metropolitan areas is the crux of this study.

Population, a basic component in the eco-system, had received little attention until recently, but, the consequences of population change have now been realized as significant to the patterns of organization in the human society.

Growth of the metropolitan areas, which has been a recent development in the context of urbanization, is the result of population redistribution. Population change and redistribution can come about in two ways only: through changes in reproductive processes and through net migration.[1] The first factor is dependent upon the fluctuation in births and deaths, the second is a function of movements to and from specific regions.

The primary concern of the researchers regarding population change has been with the reproductive changes i.e. the factors of fertility and mortality. Analysis of births and deaths in considering population size have emerged to be the crux of demographic analysis vis-a-vis population change. The development of sophisticated techniques in measuring mortality and fertility has greatly enhanced the understanding of reproductive changes. However, the remaining component of population change, migration, has received much less attention.

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[1]Donald J. Bogue, Components of Population Change, 1940-50: Estimates of Net Migration and Natural Increase for Each Standard Metropolitan Area and State Economic Area, (Chicago: Population Research and Training Center, Studies in Population Distribution, No. 12, 1957), p. 1.

Although migration has played an increasingly important role in population change and redistribution, yet the lack of data on internal migration and the problems in measurement have hindered a better understanding of this process.

Earlier students of migration were primarily concerned with the effects of international migration as an influential factor affecting the population growth in addition to reproductive changes. However, the recent rapid internal movements of people within the national boundaries has influenced a number of demographers and economists to focus attention upon the process and consequences of internal migration. The study of internal migration is now recognized as important vis-a-vis the process of urbanization and its consequences. Demographers who have been concerned with the process of urbanization, realized the importance of migration measurement in order to better understand the internal shifts in populations. Of primary importance, regarding the study of migration, has been the availability of additional data on migration from the census and development of techniques to overcome problems in estimating migration. Sources of data regarding internal migration have been a problem area. The primary sources of information, the census, does not provide sufficient data to readily measure internal migration. The registration which can show the amount of migration exists only for some European countries. Only recently in the United States, the previous place of residence of the respondents has been asked through the census questions, for 1960 and 1970. This information has been helpful in determining the amount of interstate mobility within the United States. However, such data is yet unavailable for specific subdivisions of the states. An alternative to estimating migration, in the absence of registrations, is to employ indirect methods of migration measurement. To assess the internal movements, some indirect methods have been devised lately. These indirect methods have

enhanced the demographer's understanding of internal migration, and, consequently, more attention has been given to this component of population change.

The improvements made in the area of population enumeration has also had an effect upon the study of migration. With more accurate age reporting and better enumeration of the population, the estimates of net migration have become more sophisticated and precise. Thus, the analysis of population redistribution has become more important. As Shryock points out: "The demographer has come to realize, however, that the estimation of internal movement is the real problem in both intercensal and postcensal estimates of state and local population."[2] In essence, the central question with regards to population redistribution is the process of internal migration. As Lee indicates: "By population redistribution, we mean changes in the proportional share of a country's population in fixed area units."[3] Such changes are influenced by migration as well as natural population growth. The underlying reasons for population redistribution are numerous. Desirability of an area based upon personal taste, or displeasure with one's place of residence, for a variety of reasons, can eventually lead to migration. But economic reasons are viewed to be the underlying cause of population redistribution. Everett S. Lee, in the introductory comments to the yet most elaborate study of population redistribution in the United States suggests:

> More important in recent times is the differential effect of technological progress upon the distribution of economic opportunities through structural changes involved in industrialization and urbanization: the revolutionizing

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[2]Henry S. Shryock, Jr., Population Mobility Within the United States, (Chicago: University of Chicago, 1964), p. 1.

[3]Everett S. Lee, Ann R. Miller, Carol P. Brainerd, and Richard A. Easterlin, Population Redistribution and Economic Growth: United States, 1870-1950. (Philadelphia: The American Philosophical Society, Vol. I, 1957), p. 1.

> of agriculture, with sharply increasing labor productivity and concomittant narrowing of economic opportunities for residents of the countryside in general, the expansion of capital and the movement of labor into newly growing sectors -- manufacturing, construction, transportation, communication, trade and other service branches -- which, unlike agriculture, are not tied to the land but tend to concentrate their operation in which have become the urban agglomerates of modern society. Thus, to the extent that economic growth is induced by technological change, population redistribution is likely to result, for the distribution of a country's population at any given time may be viewed as a rough adjustment to the distribution of economic opportunities.[4]

Changes in population distribution are thus a significant component of today's dynamic society. But, beyond the demographic changes which affect the size and composition of the population, the patterns of social organization are also influenced by population redistribution. The sociological changes in the patterns of community transformation are a direct consequence of the population change.

Importance of the Study

Population redistribution has been an important process in the United States. Changes in residence from one geographic unit to another are more common in this country than most.[5] While population redistribution has only recently emerged as a subject of interest, it has been in operation with regards to the process of urbanization in the United States throughout this century. While urban growth has been the rule in the United States, through population redistribution, so has metropolitan growth.

Historically, there is no doubt that population redistribution in the United States has favored the urban areas. Regarding the significance of this

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[4]Ibid, p. 2.

[5]Henry S. Shryock Jr., Population Mobility..., op. cit. pp. 63-116.

redistribution, the following table is indicative of such selectivity:

Table 1: Percent distribution of the population of the United States in urban and rural areas: 1790-1970

Year	Total All Classes	Urban	Rural
1970	100.0	73.5	26.5
1960	100.0	61.9	30.1
1950 (New Def.)	100.0	64.0	36.0
1950 (Old Def.)	100.0	59.0	41.0
1940	100.0	56.5	43.5
1930	100.0	56.2	43.8
1920	100.0	51.2	48.8
1910	100.0	45.7	54.3
1900	100.0	39.7	60.3
1890	100.0	35.1	64.9
1880	100.0	28.2	71.8
1870	100.0	25.7	74.3
1860	100.0	19.8	80.2
1850	100.0	15.3	84.7
1840	100.0	10.8	89.2
1830	100.0	8.8	91.2
1820	100.0	7.2	92.8
1810	100.0	7.3	92.7
1800	100.0	6.1	93.9
1790	100.0	5.1	94.9

Source: U.S. Bureau of the Census, U.S. Census of Population: 1970, General Population Characteristics, United States Summary, PC (1)-1B, p. 1-148; General Social and Economic Characteristics, United States Summary, PC (1)-1C, p. 1-199.

Students of population redistribution agree that the rate of internal migration was quite important in the process of urbanization as seen in Table 1 above especially in the nineteenth century. Also, in the past three to four decades, although the rate of internal migration has proportionately decreased, yet it is agreed that as much as 35 percent of urban and metropolitan growth

can be attributed to internal migration.[6]

With an increasingly larger proportion of population in the urban areas, patterns of metropolitan growth and dominance have come to play an important part on this country's socio-economic organization.

The influence of metropolitan areas upon the hinterland over-shadowed the classical differentation of rural and urban areas. The population of the United States became more than fifty percent urban between 1910 and 1920. This rapid urbanization led to the growth of metropolitan communities because of the spillover of population out of the cities.

Bogue, in discussing the Structure of the Metropolitan Community, suggests:

> A dominant city is a city which controls many of the conditions of life of all the communities lying within a broad areas surrounding it. This control arises from a higher than average degree of specialization in such functions as services and wholesaling, and from an ability to foster industrial development in its immediate vicinity by provisions of favorable combinations of the factors of production.[7]

The importance of viewing the metropolitan areas as a unit of analysis was first realized in the New York City area as early as 1906.[8] By 1950, attempts were made to cope with population distribution in such large metropolitan areas in lieu of political and economical boundries. To resolve some such problems and also view the metropolitan communities as a totally integrated entity, the new definition of Standard Metropolitan Areas was developed. As suggested in the 1950 census of population:

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[6]Everetts Lee, et. al., Population Redistribution... op. cit. Also Henry S. Shryock Jr., Population Mobility... op. cit. pp. 70-100.

[7]Don J. Bogue, The Structure of the Metropolitan Community: A Study of Dominance and Subdominance, University of Michigan, 1950, p. 61.

[8]Bureau of the Budget, Standard Metropolitan Statistical Areas, Washington, D.C.: U.S. Government Printing Office, 1967.

> It has long been recognized that, for many types of social and economic analysis, it is necessary to consider as a unit the entire population in and around the city whose activities form an integrated social and economic system.[9]

Included within the definition of SMA were certain criteria. An SMA was considered to be a county or a group of contiguous counties with a central city of more than 50,000 in population. The county must have had at least 10,000 non-agricultural workers, or 10 percent non-farm workers to have worked in the SMA. Also, non-agricultural workers must have constituted at least two-thirds of the employed persons in the county.[10]

This was one of the first attempts by the Bureau of the Census to standardize a definition of the metropolitan community as a unit of demographic analysis. In 1960, the concept of Standard Metropolitan Statistical Areas was developed to replace the 1950's definition of SMA. As indicated in the 1960 census of population:

> To permit all federal statistical agencies to utilize the same areas for the publication of general-purpose statistics, the Bureau of the Budget has established "Standard Metropolitan Statistical Areas" (SMSA's).[11]

The changes in definition from 1950 to 1960 were not great. A change that was significant was that two cities having contiguous boundries and constituting a single community, can be considered a SMSA, if they have a combined population of 50,000 and more.[12] There were no other changes and as indicated in a 1958 report of the committee on SMSA's:

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[9]Bureau of the Census, Census of Population: 1950, Vol. II, Characteristics of the Population, p. XIV.

[10]Ibid, p. XV.

[11]Bureau of the Census, United States Census of Population, 1960, General Population Characteristics, p. VIII.

[12]Ibid.

> The general concept of a metropolitan area is one of integrated economic and social unit with a recognized large population nucleus.[13]

While 212 SMSA's were designated by the Bureau of the Census in 1960, the number has increased to approximately 250 in 1970. There were no changes in definition of the SMSA's between 1960 and 1970.[14]

The above discussion is indicative of the relatively rapid growth of the metropolitan communities in the United States and their overall impact in lieu of population distribution.

The general patterns of metropolitan and urban population growth of the United States have been repeated in many states of the Union. While in others, the urban growth has not been so dramatic. Some states such as Vermont have kept their primarily rural composition, while California has become the most urban state.

Utah, following the national pattern, has witnessed a rather rapid rate of population redistribution and more specifically, urbanization. Clearly, the past seventy years are indicative of the rapid redistribution processes at work in the state:

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[13]Bureau of the Budget, Standard Metropolitan..., op. cit. p. VII.

[14]1970 Census of Population, Number of Inhabitants: Utah, (PC-1-A46). P. VII. The Census Bureau has, thusfar, listed 243 SMSA's.

Table 2: Population distribution of Utah in urban and rural areas, 1900-1970

Year	Total Enumerated Population	Total All Classes	Enumerated Urban Population	Percent Urban	Enumerated Rural Population	Percent Rural
1970	1,059,273	100.00	851,472	80.4	207,801	19.6
1960	890,627	100.00	667,158	74.9	223,469	25.1
1950	890,627	100.00	449,855	65.3	239,007	34.1
1940	550,310	100.00	305,493	55.5	244,817	44.5
1930	507,847	100.00	266,264	52.4	241,583	47.6
1920	449,396	100.00	215,584	48.0	233,812	52.0
1910	373,351	100.00	172,934	46.3	200,417	53.7
1900	276,749	100.00	105,427	38.1	171,322	61.9

Source: U.S. Bureau of the Census United States Census of Population for each decennial period 1900 to 1970.

During the last two decades, the urban population of the state has changed from 449,885, or 65.3% of the state's total to 851,472, or 80.4%. As the data show, the process of urbanization has continued to the point where over 80 out of every 100 Utahns now reside in the urban areas.

There has been a net migration to the cities of this state quite consistently during the first sixty years of this century.[15] The growth of Utah's metropolitan communities has been rather rapid. The following table illustrates the phenomenal growth of Utah's SMSA's during the past two decades:

[15]Kooros M. Mahmoudi, "A Historical Study of the Demographic Aspects of Urbanization in Utah: 1900-1960." Unpublished Masters Thesis, (Logan: Utah State University, 1969.)

Table 3: SMSA population of Utah, 1950-1970

Place	1950	1960	1970
Salt Lake City	274,895	447,795	557,635
Ogden	83,319	121,927	126,278
Provo-Orem	---*	106,991	137,776

*Not yet classified as an SMSA
Source: U.S. Census of Population, Volume 1950, 1960 and 1970. Utah.

It is significant to note that while the total population growth for the State of Utah between 1960 and 1970 was 169,000 (from 891,000 to 1,059,000), 93 percent of this growth took place within the three SMSA's, and most Utahns now reside in the three SMSA's.[16] (See Appendix for Utah SMSA Maps)

Of interest here is the role of the metropolitan communities in the process of population redistribution as well as the influences such areas have economically and socially. As Bogue suggests:

> A metropolitan community is an organization of many subdominate, influent, and subinfluent communities, distributed in a definite pattern about a dominant city, and bound together in a territorial division of labor through a dependence upon the activities of the dominant city. Subdominant communities produce surpluses for exchange throughout the area. They aid in the interchanging which takes place between the central city and the rural populations..... The metropolitan community has come to be a characteristic pattern by which at least one urbanized commercial-industrial society, the United States, is organized.[17]

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[16] 1970 Census of Population and Housing, Final Report, General Demographic Trends for Metropolitan Areas, 1960 to 1970, Utah, PHC (2)-46. p. 4.

[17] Don J. Bogue, The Structure of..., op. cit. p. 61.

The metropolitan communities are thus a central point regarding the process of population redistribution. While the majority of Utahns live in the three SMSA's, so has the process of population change evidenced in these areas.

It is significant to concentrate in these metropolitan areas while measuring population redistribution. Of importance in this process of population change and metropolitanization are the questions:

1. Who are the migrants and how many?
   - A. How selective are the migrants in terms of age distribution?
   - B. How selective are the migrants in terms of sex distribution?
   - C. Where do the migrants come from and where are they going, i.e. which SMSA?
2. What proportion of the metropolitan growth is due to migration?
   - A. How has migration affected the age and sex distribution of the metropolitan population structure?
   - B. How has the reproduction processes affected the population growth of the metropolitan areas?
3. What are the important variables in the metropolitan areas that have influenced migration?
4. Have employment and unemployment rates been significant in relation to the migrating population?

Unfortunately, such questions have not been fully examined by the students of population redistribution in Utah and elsewhere. Significantly, Utah is an excellent example of rapid population redistribution and urbanization. As table 3 shows, the process of metropolitan population growth has also been rather rapid and recent. For these reasons, a close analysis of population redistribution in Utah during the last two decades would yield meaningful insights into this process.

Objectives of the Study

The general objective of this study is to measure net in- or out-migration to or from the Standard Metropolitan Statistical Areas of the State of Utah between 1950-1960 and 1960-1970. In order to measure the degree of population redistribution, the amount of intercensal net migration for Salt Lake City, Ogden and Provo-Orem SMSA's will be measured and compared to the natural growth of population for the same areas and same period of time.

The specific objectives are: (1) to estimate net migration for the three SMSA's in the State of Utah, (2) to estimate the selected socio-demographic characteristics of the migrants, (3) to demonstrate the effects of natural population growth in contrast to growth due to net migration in the SMSA's of Utah, (4) to estimate the effects of population redistribution upon the population structure and composition of Utah's SMSA's, and (5) to demonstrate the relationship between population change in the SMSA's and economic factors of labor force supply and employment.

Scope and Limitations

In this study of population change and redistribution within the State of Utah between 1950 and 1970, the focus of attention is placed upon the metropolitan communities and specifically the SMSA's. In essence, the amount of net migration to or from the three SMSA's of the State of Utah are the focal points of this study. Age and sex of the migrants, their numbers, their destination, and their impact upon the receiving areas are the primary variables in this analysis.

The limitations that have posed a degree of problems are twofold. First, the indirect methods of measuring migration are not the most accurate, but in lieu of the data, they are the only means possible. Second, the estimates of migration

through indirect measures using the census data only show net migration. The total movements of people in and out of the SMSA's cannot be detected due to the nature of the methods used, thus, the estimates demonstrate the balance of migration processes. Net migration estimates demonstrate a balance of in- and out-migrants. The findings should be viewed in the context of this limitation which mars most studies of migration.

Organization of the Study

Following these introductory remarks, Chapter II is devoted to analysis of the classical theory in the area of community transformation and urbanization. As urbanization proceeds and metropolitan communities emerge, the patterns of social organization also undergo some changes. Many sociologists have critically analyzed the essence of community transformation from less complex patterns of organization to heterogeneous and complex webs of interaction in urban regions. The specific problems derived from such review of literature are also included in that chapter. Chapter III is a discussion of the method used in estimating the amount of migration.

In this section, the methods of migration measurement are analyzed in detail and emphasis is put on the method utilized specifically in this study, furthermore, this chapter deals with the applicability of different methods pending on the available data with regards to geographic unit used for measurement. Chapter IV is devoted to the actual measurement of migration for each SMSA of the state. The amount of net migration for each metropolitan area based on estimates by age and sex is measured, thus, illustrating the estimated patterns of population redistribution.

The analysis of the finds in lieu of demographic, economic, and sociological considerations are presented in Chapter V. This chapter deals with the impact of

net migration upon the population structure of the SMSA's and also demonstrates the relationship between the socio-economic variables within the metropolitan areas and the patterns of migration for these areas. Age and sex selectivity of migrants and their relationships to the labor force are also discussed in this section. Finally, Chapter VI presents the summary, conclusions, and recommendations of this study to hopefully provide a framework for further research in this area.

REVIEW OF LITERATURE AND SPECIFIC PROBLEMS

Definition of Terms

The primary objective in this section is to explore the existing body of literature regarding the process of population redistribution and migration. Before such an analysis, however, it is important to precisely define certain concepts and terms which will be used throughout this study.

Since the terms urban, rural and metropolitan are used frequently, and refer to specific categories that are designated by the Census Bureau; the same definitions are used here also:

Urban and Rural Residence:

> ...the urban population consists of all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, villages, boroughs..., but excluding those persons living in the rural portions of the extended cities... (b) unincorporated places of 2,500 inhabitants or more, and (c) other territory, incorporated or unincorporated, included in urbanized areas. The population not classified as urban constitutes the rural population.[18]

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[18]U.S. Department of Commerce, 1970 Census of Population: Final Population Counts, (Advanced Report) PC(VI)-46, Utah. December 1970, p.2.

The Standard Metropolitan Statistical Area (SMSA):

> ...a standard metropolitan statistical area is a county or group of contiguous counties which contain at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000.[19]

Urbanization: Warren S. Thompson's definition of urbanization is used:

> ...Movement of people from communities concerned with agriculture to other communities, generally larger, whose activities are primarily centered in government, trade, manufacturing, or allied interests.[20]

Population Redistribution: As defined by E. S. Lee:

> By population redistribution, we mean changes in the proportional share of a county's population in fixed area units... We conceive of economic growth and population redistribution as linked by a continuous chain of interdependent variables.[21]

Migration: As used by Dorothy S. Thomas:

> Change of residence from one community, or other clearly defined geographic unit, to another...[22]

Labor Force:

> As defined by the 1970 U.S. Census, the labor force is comprised of all the people who are over 16 years of age and are either employed or unemployed but seeking employment.

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[19]U.S. Department of Commerce/Bureau of the Census, 1970 Census of Population: General Population Characteristics, (Advanced Report), PC (V2)-46, Utah. January 1971, p. 2.

[20]Warren S. Thompson, "Urbanization", Encyclopedia of the Social Sciences, Vol. XV, 1935, p. 189.

[21]E. S. Lee et al., Population Redistribution, op cit. p. 2.

[22]Dorothy S. Thomas, Research Memorandum on Migration Differentials, (New York: Social Science Research Council), Bulletin 43, 1938, p. 4.

Classical Rural-Urban Differentiation

In essence, the dichotomies of rural and urban refer to community types. The central issue in such differentials is the organization of the respective communities and, of course, their emergence. Such analysis if found among the works of most early sociologists. For example, Ibn Khaldun, a 14th century student of history and society, differentiated communities based upon their solidarity and cohesiveness (Assabyiah).[23] Ibn Khaldun was concerned with the community types and changes from one type to another. For example, he differentiated between the nomadic communities (badavah) and the more stable (omran) patterns of village or city communities. It is essential then, to understand what is meant by a community. Most recent students of the community converge regarding the components of the community as being: population, a geographic area, division of labor, a common culture, collective action with response to the needs, and consciousness of the members.[24]

Beyond the basic components of communities, Nisbet points to the nature of community:

> Community if founded on man conceived in his wholeness rather than in one or another of the roles, taken separately, that he may hold in a social order. It draws its psychological strength from levels of motivation deeper than those of mere volition or interest, and it achieves its fulfillment in a submergence of

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[23]Ibn Khaldun, An Arab Philosophy of History, translated by Charles Issawi. London: Murray. 1950.

[24]See, for example, Roland L. Warren, Community in America, Chicago: Rand McNally and Company, 1963.

Chester Horton and Paul B. Hunt, Sociology (Third Edition), New York: McGraw-Hill, 1972.

Joseph Himes, The Study of Sociology: An Introduction, Glenview, Illinois: Scott, Foresman and Company, 1968, p. 483.

A. Green, Sociology: An Analysis of Life in Modern Society, (5th edition), New York: McGraw-Hill, 1968, p. 290.

> individual will that is not possible in unions of mere convenience or rational assent.[25]

To view the community, as Nisbet indicated, from a broad and macro perspective has certain advantages. Hence, the primary concern here is the type of organization within the community and the changes thereof, viewed from a redistribution point of view. This treatment of the community as a unit idea is as old or older than sociology as a discipline. In the classical tradition of early sociologists, the community has been classified from a dichotomus point of view while an inherent transition from one type to the other has been the underlying nature of change. It is common, then, to find such conceptual developments as: Badavah-Omran,[26] Gemeinschaft-Gesselschaft,[27] Mechanic-Organic,[28] Traditional-Rational,[29] Military-Industrial,[30] Status-Contract,[31] Folk-Urban,[32] and Sacred-Secular,[33] while approaching the study of community and its patterns

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[25]Robert A. Nisbet, The Sociological Tradition, New York: Basic Books Inc., 1966, pp. 47-48.

[26]Ibn Khaldun, op. cit.

[27]Ferdinand Tonnies, Gemeinschaft and Gesselschaft, (Community and Society), Translated by Charles Loomis, East Lansing, Michigan: Michigan State University Press, 1957.

[28]Emile Durheim, The division of Labor in Society, translated by G. Simpson, Glencoe, Illinois: The Free Press of Glencoe, 1938, pp. 70-132.

[29]Max Weber, The Theory of Social and Economic Organization, Translated by A. M. Henderson and T. Parsons, New York: Oxford University Press, 1947.

[30]Herbert Spencer, Principles of Sociology. New York: D. Appleton & Co. 1912.

[31]Henry Maine, Ancient Law, New York: Henry Holt & Co., 1888.

[32]Robert Redfield, The Folk Culture of Yucaton, Chicago: University of Chicago Press, 1941.

[33]Howard Becker, Through Values to Social Interpretation, Durham, N.C., Duke University Press, 1950.

of organization. In essence, the variables under consideration are many, while the analysis of the community is essentially based on a number of specific criteria. For example, Tonnies' concern in his analysis of Gemeinschaft and Gesselschaft is based on the "relationships" within the community. He contrasts the personal, informal, traditional, sentimental and general relationships found in Gemeinschaft to the impersonal, formal, utilitarian, realistic, and specialized relationships in Gesselschaft. Weber's Traditional vs. Rational is essentially an analysis of type of organization with regards to informal and formal nature of rules of conduct. Similar patterns of transformation are evidenced in writings of many a student of community. Perhaps it is more meaningful to view this transformation of communities in light of communal and non-communal types.[34]

Basically, if the components of the community were contrasted in each polar ideal type, then a transformation is inevitably evidenced. For example, with regards to population, the communal manifests smaller numbers and less density as compared to the non-communal type. Suffice to say that the classical conception of transformation in communities has enhanced the sociologists' understanding of the community and its organization. At least one relevant conclusion from the study of classical differentation of communities for the purpose of this study is that there actually <u>is</u> a difference with regards to rural and urban patterns of interaction. No matter how minimal this differentation is conceived to be, the denial of such differences can be rejected upon the theoretical formulations and empirical findings of the sociologists. The magnitude and importance of rural-urban differentials are, of course, subject to historical epochs. So logically, in constructing a theoretical

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[34]R. A. Nisbet, <u>The sociological</u>..., op. cit., p. 48.

frame of reference; it is more applicable to utilize the latest of such formulations which have more relevance to the contemporary community.

While studying the communities here and in a separate cultural setting, Robert Redfield emphasized the community and its transformation. His conceptions of rural and urban will be used in more detail as his analysis is historically recent, and sociologically more precise and sophisticated. Redfield, in his well known field study of the folk culture of Yucatan, presents distinct points of development from a rural to an urban society.[35] Redfield concentrated on a number of variables in his study. Prominent among these variables were the following: size, isolation, homogeneity, heterogeneity, specialization and secularism, to name a few. Redfield's study illustrated that at the rural (folk) pole there appeared homogeneity, isolation and less specialization. However, at the urban pole, he recognized heterogeneity, secularization, and specialization.

In differentiating the urban communities from rural areas, the following factors summarize part of Redfield's conception of the urban environment:

1. Less isolated
2. More complex division of labor
3. More heterogeneous
4. A developed money economy
5. Less religious
6. Kinship institutions are less organized and less effective.
7. Professional specialists who are more secular than sacred.
8. Allowance of greater freedom of choice to the individual.
9. Greater dependence upon impersonally acting institutions of control.

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[35]Robert Redfield, The Folk Culture, op. cit., pp. 10-35.

The relevance of the above "ideal-type" formulation may be criticized as for its validity in the contemporary United States. But, as Schnore has recently point out:

> Rural-urban divergencies in the United States are still substantial and well worth studying, despite the apparent fact that they are diminishing. Rural-urban types of community display patterned differences, while place of residence and place of origin are fundamental characteristics of individuals that permit the analysts to predict human behavior.[36]

The existence of the rural-urban differentials is commonly accepted. But, in recent literature there appears a modification of more traditional stands. The significant point, however, is that these differences are still in existence while approximately 75% of the nation's population reside in urban areas. There is essentially no argument with the relative disappearances of rural-urban differentials, but, this depends upon the objectives of the researcher. In studying the communities such changes from one classified area (rural) to another (urban), are rather important. However, if one studies the American society or culture, such differences may receive less attention, for the masses will be dealt with as urbanites due to their total proportions in the population. Nevertheless, with regards to patterns of organization from a demographic, and socio-economic point of view, the differences are worthy of special attention in lieu of population redistribution and metropolitan dominance.

Population Redistribution in the United States

Since the time of the first census of the United States in 1790, the rural areas of the country have proportionately lost population to the urban areas.

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[36]Leo F. Schnore, "The Rural-Urban Variable: An Urbanite's Perspective", Rural Sociology, Vol. 31, p. 133; 1960.

Certainly, the relative growth of the cities within the processes of industrialization and urbanization are observable facts. The growth of the cities has been as much a consequence of internal migration as that of reproductive growth. Essentially, the role of migration in the process of population redistribution was not necessarily urban selective. The movement of early settlers out of the eastern regions of the U.S. to the new frontiers was basically that of homesteading and primary type economic activity, i.e. agriculture and mining. Nevertheless, in an historical perspective, the movement of population has tended to benefit the concentration of population and thus urbanization.

In Shryock's words:

> Part of these geographic trends, for example, the migration from South to North, is associated with migration from agricultural and rural areas to metropolitan and large urban areas. The regions that have been experiencing net out-migration are characteristically agricultural whereas the regions with net in-migration are more industrialized and urbanized. Furthermore, even within the gaining regions, there tend to be shifts of population from rural to urban areas.[37]

This process of population redistribution was firstly studied by a number of historians and geographers who tended to observe the trends in generalities. More recently, a number of economists and demographers have become more concerned with the effects of such redistribution basically from an economic point of view. For example, the most elaborate and encompassing of such studies which was presented in three volumes is that of Population Redistribution and Economic

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[37]Henry S. Shryock, Jr. Population Mobility..., op. cit., p. 63.

Growth, United States, 1870-1950.[38] The study is primarily concerned with methodological developments to measure population redistribution and, also, to correlate the changes in population with indices of economic growth as stimulants to population redistribution. The primary emphasis in the above study is to provide data in illustrating the actual movements based upon the United States census figures.

Another, more recent study, of economic growth and its relation to population is that of R. A. Easterlin: Population, Labor Force, and Long Swings in Economic Growth.[39] The primary objective of that study in the author's words, is:

> ...To seek an explanation of the causes and economic effects of the observed demographic swings and thereby to derive new insights into recent as well as possible implications for the future.[40]

The studies cited above are representative of the type of research undertaken by the students of population redistribution. It is significant to note at this point that the primary emphasis of most such studies has been upon the economic condition of the labor market vis-a-vis the population growth. A central variable in the process of redistribution is the migrant. However, more often than not, this variable has been overlooked as an important entity and only analyzed in relation to supply and demand of labor pertinent to economic growth.

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[38]Everett S. Lee, Ana R. Miller, Carol P. Brainerd and Richard A. Easterlin, Population Redistribution and Economic Growth, United States, 1870-1950, Philadelphia, Pennsylvania: American Philosophical Society, Vol. I: "Methodological Considerations and Reference Tables";
Simon Kuznets, Ann R. Miller and Richard Easterlin, Vol II: "Analysis of Economic Change";
Hope T. Eldridge and Dorothy S. Thomas, Vol. III: "Demographic Analyses and Interrelations."

[39]Richard A. Easterlin, Population, Labor Force, and Long Swings in Economic Growth, New York: Columbia University Press, 1968.

[40]Ibid, p. 5.

An examination of some of the most recent studies of internal migration and population redistribution also suggests a lack of sensitivity to the migrants per se. For example, in a recent article by Johnson, it is suggested that migration and eventually urbanization are affected by land values as a determinant.[41]

Others have concentrated on population density and geographic location to explain the urban patterns of growth.[42]

More specifically, with regards to urban migration, the researchers have studied certain aspects of this process. For example, Hanson and Simmons have concentrated on role paths in the study of migration to urban areas.[43]

In viewing employment status and migration, Massnick focuses upon employment, while the process of migration and migrants are not central in their analysis.[44]

In yet another recent article, Ann R. Miller, studies the "Migration of Employed Persons to and from the Metropolitan Areas of the U.S."[45] Again the emphasis in this article is upon a segment of the migrating population.

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[41]R. J. Johnson, "Property Values as Structural Elements of Urban Revolution", Economic Geography, 45:1-29, January, 1969.

[42]See for example, R. D. Threadway, "Social Components of Metropolitan Population Densities", Demography, vol. 6, no. 1, 1969, pp. 55-74.

[43]R. C. Hanson and O. G. Simmons, "Role Path: A Concept and Procedure for Studying Migration to Urban Communities", Human Organization, 27:152-8, 1968.

[44]G. Massnick, "Employment Status and Retrospective and Prospective Migration in the U.S.," Demography, vol. 5, 1968, pp. 79-85.

[45]Ann R. Miller, "The Migration of Employed Persons to and from Metropolitan Areas of the U.S.," Journal of the American Statistical Association, 62, 320: 1418-1432. December, 1967.

A lack of consistency or guidelines mars the studies of population redistribution of recent years. This is perhaps due to a lack of theoretical conceptualizations in lieu of the variety of empirical studies that have been done in the realm of urbanization and metropolitan growth. Such diversity of research, and yet a lack of cohesiveness has created what Anslem L. Strauss aptly calls a "hodgepodge" of theory with regards to the process of urbanization.[46]

With the exception of some earlier research in the realm of internal migration, the recent literature is somewhat vague and confusing with regards to population redistribution. E. S. Lee has summarized the current state of migration theory and research in the following statement:

> This century has brought no comparable excursion into migration theory. With the development of equilibrium analysis, economists abandoned the study of population, and most sociologists and historians are reluctant to deal with masses of statistical data. A crew of demographers has spring up, but they have been largely content with empirical findings and unwilling to generalize. Indeed, Vance, in his presidential address to the Population Association of America, entitled "Is Theory For Demographers?" contends that demography for lack of theory, remains unstructured and raises the question, "Is there room (in demography) for the bold and audacious?"[47]

One of the few exceptions to the above analysis is the earlier works of E. G. Ravenstein, which posed some intriguing questions regarding the characteristics of the migrants and their destination.[48] Some of Ravenstein's "laws" are summarized below:

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[46]Anslem L. Straus, "Structure for Discovering Urban Theory", in Leo F. Schnore, Social Science and the City, New York: Prager Publishers, 1967.

[47]Everett S. Lee, "A Theory of Migration," Demography, Vol. 3, 1966. pp. 47-57.

[48]E. G. Ravenstein, "The Laws of Migration", Journal of the Royal Statistical Society, Vol. 48, pp. 161-235, June, 1885, and Vol. 52, pp. 214-305, June, 1889.

1. Most migration takes place in short distances.

2. The direction of migration is toward "great centers of commerce and industry."

3. Each main current of migration produces a compensating counter-current.

4. Long distance migrants go to either centers of commerce or industry, by preference.

5. The residents of towns migrate less than the residents of rural areas.

6. Females are more migratory than males.[49]

Ravenstein's generalizations are based on the late 19th century trends of population redistribution in the United Kingdom. Although some of his "laws" are out-dated and do not account for such technological changes as in the mode of transportation, other of generalizations are surprisingly accurate and relevant even today. The propositions summarized above are substantiated through most current investigations.

A second study of particular value in internal migration is the pioneering effort of Dorthy S. Thomas in Research Memorandum on Migration Differentials.[50] Thomas' study is perhaps the most encompassing and conclusive study of internal migration in the United States. Thomas' memorandum was completed in 1938 as Ravenstein's laws date back to 1885 and 1889. However, the generalizations put forth by Thomas, in particular, are still a starting point for the students of internal migration today.

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[49]Ibid., pp. 198-199.

[50]Dorothy S. Thomas, Research Memorandum on Migration, op. cit.

Thomas' research dealt with the following characteristics of the migrants:[51]

1. Age differentials
2. Sex differentials
3. Family status differentials
4. Physical health differentials
5. Mental health differentials
6. Intelligence differentials
7. Occupational differentials
8. Motivation and assimilation differentials

Of the eight characteristics above, the first two and the latter two (nos. 1, 2, 7 and 8) are the most relevant to the study at hand. The age and sex differentials of the migrants are primary demographic variables which indicate the basic composition of the migrants. By the same token, these two variables are also more subject to empirical investigation and actual measurement. Regarding the age differentials, Thomas stated: "There is an excess of adolescent and young adults among the migrants, particularly migrants from rural areas to towns, compared with the non-migrating or the general population."[52]

With respect to the sex differentials, Thomas and Ravenstein both suggest a female selectivity among the migrants. They have suggested that females outnumber male migrants especially in the early adolescent years.[53]

Regarding the migrants and their occupational differentials, lack of data and studies in this area is rather pronounced. Nevertheless, an analysis of the occupational structure in the receiving area vis-a-vis the occupational make-up of the

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[51]Ibid.

[52]Ibid.

[53]Ibid. p. 56.

sending area can be fruitful. Motivational and assimilation differentials are also subject to the socio-economic conditions at the place of departure or arrival.

The contributions made by Thomas' study of internal migration differentials in the United States is helpful in generating hypotheses with regards to the study of migration in specific regions.

It is important to note that the above discussion is based upon rural-urban migration. However, in recent years, the importance of internal migration has been realized in relation to metropolitan growth and dominance. As rural and urban differentiations were important and useful previously, the patterns of metropolitan dominance and specifically, the SMSA's are more important today as units of analysis. In summary, the patterns of internal migration are more meaningful today when analyzed in the context of non-metropolitan and metropolitan areas and their patterns of population redistribution.

Population Redistribution in Utah

Historically, Utah has followed the general patterns of population redistribution as evidenced by the United States as a whole. The rule has been urbanization. Bradford, Lawson and Payne have indicated that the urban population of the state changed from 20 percent in the late 1800's to 75 percent by 1960.[54] The rather significant effects of population redistribution in Utah can be realized more easily by adding that Utah lost a considerable number of her inhabitants to other states between 1910 and 1940. Frost indicates that over 50,000 Utahns out-migrated from the state in the 1920's alone.[55] Still, the rapid rate of urbanization in Utah

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[54]R. Bardford, J. Payne, and J. Lawson, Utah Population, Bulletin 3, Provo, Utah: Brigham Young University, 1963.

[55]Henry H. Frost, To Have and to Hold, Bulletin XXXLX-15, Salt Lake City, Utah: University of Utah, 1948.

continued inspite of such out-migrations, thus, rapid population redistribution.

Geddes, identifying most of the migrants as being in younger age groups stated:

> Small communities provide few job opportunities outside of agriculture...certainly comforts and luxuries are less numerous. It is not a matter of surprise therefore that the smaller the town the larger the proportion of youth who left.[56]

The effects of population redistribution in the state, regarding the migrating population, are significant in this century:

Table 4. Estimates of rural-urban migration by Sex: 1900-1960

Date	Estimated number of in-migrants to urban areas		Total (both sexes)
	Males	Females	
1900-1910	33,130	35,330	68,460
1910-1920	9,251	7,379	16,630
1920-1930	16,207	14,931	31,138
1930-1940	12,291	11,725	24,138
1940-1950	33,313	33,684	66,897
1950-1960	40,150	38,871	79,021
Total	144,242	141,920	286,162

Source: Kooros M. Mahmoudi, "A Historical Study of the Demographic Aspects of Urbanization in Utah, 1900-1960", Unpublished masters thesis, (Logan, Utah, Utah State University, 1969). p. 40.

[56]Joseph H. Geddes, Migration: A Problem of Youth in Utah, Bulletin 323, Logan, Utah: Utah State University, 1946. pp 17-18.

The trend of population distribution is clear for Utah. There has been a rapid process of urbanization in the state and migration has played an important part in this redistribution. The rural to urban migrants for the period 1950 to 1960, constituted 8% of the state's total population.[57] More importantly, the growth of the SMSA population of Utah has been phenomenal in the past two decades. In lieu of the SMSA growth and the dominance which such areas have as socio-political units, it is meaningful to gain insights into the patterns of SMSA growth in the State of Utah.

The emerging questions with regards to this study are:

--- How significant has been the migration to the SMSA's for the past two decades?

--- Who are the migrants with regards to age and sex?

--- What are the socio-economic consequences of such population redistribution?

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[57]K. Mahmoudi, "A Historical study...." op. cit. p. 43.

SPECIFIC PROBLEMS

As stated earlier, the primary objectives of this study were: (1) to estimate net migration for the three SMSA's in the State of Utah, (2) to estimate the selected socio-demographic characteristics of the migrants, (3) to demonstrate the effects of natural population growth in contrast to growth due to net migration in the SMSA's of Utah. (4) to estimate the effects of population redistribution upon the population structure and composition of Utah's SMSA's and (5) to demonstrate the relationship between population change in the SMSA's and economic factors of labor force supply and employment.

The specific problem relating to the objectives of this study was: Has growth of Utah's SMSA's in the decades of 1950-60 and 1960-70 has been significantly affected by young people, aged 20 to 34, migrating into such areas and does there exist a relationship between the rate of in-migration and occupational growth of the SMSA's?

The specific questions asked are as follows:

Question one: "What role has migration to Utah's metropolitan areas played in the emergence of the SMSA's between 1950 and 1970?" Most studies of the metropolitan populations of the United States up to 1960 have shown the relative importance of migration in the development of such areas. It is assumed that the same trends hold ture for Utah and to have continued up to the 1970 census time.

Question two: "Were most migrants in the younger age groups, i.e. age 20-34?" This is based upon the earlier studies which have indicated that the migrants are mostly younger individuals. This pattern has particularly held so far as the rural to urban migration is concerned.

Question three: "Were most migrants to the SMSA's females, although the sex differential may not be expected to be great?" Here again, the classical literature on

migration based upon the historical evidence suggests a greater female selectiveness. With the increasingly more mobile population in this country and higher frequency of female participation in the labor force, not a great deal of difference in sex selectivity is expected. But, it is expected that females should outnumber males in this process.

Question four: "Has the process of population redistribution markedly affected the population structure of Utah's SMSA's during the last two decades?" It is suggested that changes in age and sex composition of the metropolitan areas is affected by migration. If, in fact, migration is a selective process, then it could be expected that the metropolitan areas will demonstrate lower sex ratios. Also, the age composition of these areas would also reflect the influences of the migrants due to age selectivity of the in-coming population.

Question five: "Is there a positive relationship between the rate of in-migration to the SMSA's and the employment opportunity of the SMSA's?" It is implied that the "pull" factors attracting migrants to the SMSA are influenced by the industrial developments in such areas. In other words, for economic reasons, the higher the degree of industrial growth, the higher the number of in-migrants for the relative period of time. The growth of industrial employment, if any, plus the distribution of population in such activities will suggest relationships.

METHODOLOGY

Introduction

Measurement of migration, due to lack of sufficient data, has traditionally posed a number of problems for demographers. The early students of migration were primarily concerned with international movements of people. Thus, the required registrations at border crossings provided adequate information regarding the international movers. However, the study of internal migration has been hampered for lack of recordkeeping. With the exception of a few European nations where records of internal movements are kept, such data are not available in most countries.[58]

If information on the internal migrants were available through transit statistics, registrations, or special surveys, then the direct means of obtaining data could provide accurate and desirable estimates of migration. But direct methods of estimating migration in the United States cannot be utilized, for refined and specific data are unavailable for the country and its subdivisions. The census statistics which can be useful are derived from the 1960 and 1970 census of population when the previous place of residence was asked. However, this data is not available for subdivisions of the states' population.

The indirect methods of estimating net migration, as Kim has pointed out,[59] can be placed in four categories:

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[58]G. W. Barclay, Techniques of Population Analysis, New York: John Wiley and Sons, Inc. 1958. pp. 241-256

[59]Yun Kim, "The Population of Korea. 1910-1945." Doctoral dissertation, Australian National University, Dept. of Demography, 1966. p. 349.

1. The vital statistics method
2. The place-of-birth method
3. The place-of-birth census survival ratio method
4. The survival ratio method

The above four methods rely upon the enumerated population figures which are derived from the censuses.

1. The Vital Statistics Method

This method is used to measure net migration by differentiating between natural population increase and total population increase. The following formula demonstrates the procedure:

$$P1 = Po + B - D$$

where Po is size of the population at time to, the beginning of the observation, P1 its size at time t1, the end of the period, B the number of births between to and t1, and D the number of deaths.[60]

Obviously, accurate record keeping vis-a-vis the deaths and births are essential if this method is to be used. As Kim has suggested:

> ...the coverage and the accuracy of vital registration data in most countries are far from adequate for this purpose. Nevertheless, as the system of vital registration improves, this method will be more widely used.[61]

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[60]E. P. Hutchinson, "The Use of Routine Census and Vital Statistics Data for the Determination of Migration by Age and Sex in the Absence of Continuous Registration of Migrants," in D. S. Thomas, Research Memorandum, op. cit., Appendix C2, pp. 368-400.

[61]Yun Kim, "The Population of...," op. cit. p. 350.

This type of registration does exist for the subdivisions of Utah's population, i.e. the SMSA population, but data was not available for the 1970 census, thus, method cannot be used for more precise measurement of net migration.

2. The Place-of-Birth Method

A second indirect method of estimating migration is that of the place-of-birth. What is needed in this approach is to know the birth place of the population under consideration. The birth residence index, which is the difference of those who have in-migrated to an area and those who have out-migrated from the area, is used in tabulations.[62] This method can be used for the measurement of life-time migrants and also for a specific period of time. Kim expresses the procedure of estimating intercensal net migration by using this method in the following way:

$$tMo = (It - Io) + (Oo - Ot)$$

where tMo stands for net migration during the period O and t, I and O for in-migrants and out-migrants, and o and t for time o and t.[63]

The same procedure can be shown in a different way, as Zachariah suggests:

I2 -I1 = Net Migrants during the decade to the state among persons born outside the state

O1 -O2 = Net Migrants during the decade to the state among persons born in the state

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[62]C. W. Thornwaite, Internal Migration in the United States, Philadelphia: The University of Pennsylvania Press, 1934.

[63]Yun Kim, "Population of Korea...," op, cit. p. 351.

and the sum:

(I2 - I1) + (O1 - O2) = (total) net migrants during the decade to the state.[64]

The above method is not free from certain errors which can bias the estimated net migration. As Zachariah indicates, errors of enumeration and, more importantly, the affect of mortality among the migrants and multiple movements, as well as circular movements can result in erroneous estimations of net migration.[65]

This method is quite useful when intra-state migration is being measured. However, since the birth-residence data is not available for state subdivisions, the utilization of this method in this study is not possible.

3. The Place-of-Birth Census Survival Ratio Method

If classification of population according to place of residence and place of birth is available for two separate periods, this method of measuring migration is quite accurate and desirable and census survival ratios are used in calculation.[66] In discussing the intercensal migration by this method for the United States between 1950 and 1960, Eldridge and Kim point out:

> ...We have reasonably "closed" divisional populations and can calculate age-specific census survival ratios for the population native to each division, including both those living in the division (life time non-migrants) and those living elsewhere in the United States (life time out-migrants) at the two census dates. Such ratios applied to the division's native residents in 1950 in each of nine divisions yield expected numbers for 1960. The

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[64]K. C. Zachariah, A Historical Study of Internal Migration in the Indian Subcontinent, 1901-31, Demographic Training and Research Center, Bombay, India, 1964. p. 64.

[65]Ibid.

[66]See below for a full discussion of the Census Survival Ratio Method.

> difference between these numbers and the numbers enumerated in 1960 are estimates of net change due to intercensal migration...[67]

The procedure for estimating migration through this method can be summarized as follows:

If population in area 1 at time O can be categorized according to the place of birth, then, population living in area 1 can be divided into n subgroups, which represents n areas of birth. The population of area 2 or 3, etc, can also be put into n groups according to the place of birth. Thus the entire population born in each respective area can be arrived at. As Kim suggests:

> Repeating the same procedure for the later census at time t, the enumerated population in each area according to place of birth and the total population born in each area can be obtained.[68]

If data is available, this method is believed to be superior to the place-of-birth method and also the census survival ratio method.[69] The place-of-birth census survival ratio method yields estimated net migration as well as the volume and direction of the movement. Again, lack of such data for specific subdivisions within the state limit the use of this method to the interstate measurement of migration.

4. The Census Survival Ratio Method

The census survival ratio method (C.S.R.), which will be used in estimating net migration in this study, is based upon at least two consecutive consuses (the

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[67]Hope T. Eldridge and Yun Kim, The Estimation of Intercensal Migration from Birth-Residence Statistics: A Study of Data for the United States, 1950 and 1960. Philadelphia: University of Pennsylvania Population Studies Center, Report No. 7, 1968, p. 4.

[68]Yun Kim, "Population of Korea...", op. cit. p. 353.

[69]Ibid. p. 355.

Period between consuses). This is a measure of net migration during a ten-year period and obviously cannot detect all movements which take place. The census survival ratio method was first developed to measure net migration between the subdivisions within a country. The scope was then a national one. As Lee and Lee have indicated, the development of this method on the national level assumed three basic propositions: Firstly, the assumption that the national population is closed (no migrations to and from the country). Secondly, that specific mortality rates are assumed to be the same for all subdivisions of the country. And thirdly, the proportion of the age-sex groups of the census population are assumed to be the same at the time of two consecutive consuses.[70]

It should be emphasized at this point regarding the reliability of the census survival ratio method, that the utilization of this method for purposes of estimating net migration on the state level follows closely the application of this method on a national level. It is important to rate that the state population is quite comparable to the national population vis-a--vis the assumptions inherent in the survival ratio method. When using the C.S.R. on a national level, it is assumed that each state's population is similar to the national population i.e. that the population is closed, proportions in each age - sex group are the same, and the mortality schedule is also the same. Thus, the basic assumption here is that the SMSA population is similar to the state insofar as age - sex structure and mortality schedule is concerned, which makes the survival ratios similar. More importantly, the proportion of out-migrants and in-migrants are assumed to be the same for the state and the SMSA population. The same assumption is made with regards to the migration patterns

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[70]E. S. Lee and Ann S. Lee, "Internal Migration Statistics for the United States," Journal of the American Statistical Association, LV, 1960, pp. 664-697.

of the nation and the states as well. Furthermore, since no other methods are available for such measurement of migration, the applicability of the survival ratio method and the implied assumptions which are methodologically sound, lead to rather reliable estimates of net migration.

A focal point of interest here is that the census survival ratios are basically a complement of the mortality rates. In essence, then, the survival ratios indicate the possibility of survival for specific age - sex groups from one census to the next. In other words, if we are concerned with the females in age group 10-14 in 1960, and want to estimate what proportion of this group survives to 1970; all that is needed here are enumerated figures regarding the females of the specific area aged 10-14 in 1960 and aged 20-24 in 1970. By dividing the survivors in 1970 by the number in 1960 we have the survival ratios for this particular cohort between 1960 and 1970. This is the essence of the survival ratio method. The aforementioned discussion can best be illustrated in the following manner:

$$\text{Survival ratio} = \frac{\text{Population of Area X, females 20-24, 1970}}{\text{Population of Area X, females 10-14, 1960}}$$

This is a forward census survival ratio, but the reversal of this (exchanging denominators) can also be employed, depending upon the nature of the study.[71]

There is no generally agreed or accepted indirect method of estimating migration for SMSA's or other small units within the state boundaries. However, the applicability of the survival ratio method in regard to the nature of data makes this method a desirable and fairly accurate procedure.

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[71]E. S. Lee, et al, Population Redistribution and Economic Growth, United States, 1870-1950. Vol. 1; Philadelphia, Pennsylvania: American Philosophical Society, 1957.

Another means of estimating net intercensal migration by utilizing the survival ratios is that of the Life Table Survival Ratio method. This method follows the same procedure as mentioned above, with the exception that the survival ratios are derived from the PX values of the life table. The life table is based on a hypothetical cohort from birth to death. The PX values of the life table are smoothed and adjusted and the cohort is closed, so the mortality schedule is fixed in advance. There is not a great deal of variation between the census survival rates and the life table survival rates with the exception that the census method is based on the actual enumerated population. For the purposes of this study both methods are used. An interesting methodological aspect develops when both the census and the life table survival ratios are utilized. Due to the nature of the life table values, the factor of interstate migration becomes inherent in the (PX) values, However, the census survival ratios are not adjusted for any amount of actual migration. Thus, a comparison of the life table estimates of migration with that of the census survival ratio estimates lead to an indication of the amount of inter-state migration and its effects upon the process of in- or out- migration to the SMSA's.

For the purposes of this study, one of the methods used is the forward census survival ratio. However, since the concern here is with a state population and not the national population, assumptions with regards to the usage of census survival ratio methods on the state level will have to be modified on the state level as suggested below:

1. The migrations that take place on the inter-state level (to or from the state) are proportionately the same for non-metropolitan and the metropolitan (SMSA) areas. This assumption is important since we know that the state's population is not closed (is subject to migration), thus, by giving such distribution equal weight on all levels, the effects of interstate migration are minimized.

2. It is also assumed that the specific mortality rates within the state are the same for the metropolitan areas (SMSA's). This assumption follows a similar proposition on the national level that all subdivisions of the country have similar mortality rates.

3. And, thirdly, consistent with the development of survival ratios on the national level, it is assumed that the proportion in each age - sex group of the enumerated population is the same at each census for the state and the SMSA's.

Modification of the above assumptions follow the same logical steps with regards to the development of the survival ratio method on a national level. These assumptions are sound and congruous with the methodological implications. Only the parameters of the population have been changed, while the basic procedure and method have remained the same.

From a statistical and methodological point of view, these assumptions are sound and the use of census survival ratio yields rather good estimates of net migration.[72]

In comparing the census survival ratio method and the life table survival ratio method, since the census survival rates are more accurate in estimating migration, the estimates of net migration derived from this method will be used throughout the analyses. However, in order to determine the inter-state migration and compare some of the results, both methods are utilized here.

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[72]C. H. Hamilton and F. M. Henderson, "Use of the Survival Rate Method in Measuring Net Migration," Journal of the American Statistical Association. XXXIX, 1949, pp. 197-206.

Procedure

To estimate the amount of net migration to the three Standard Metropolitan Statistical Areas of the State of Utah between 1950 and 1970, the survival ratios obtained from the census figures and life tables are used.

The survival ratio, multiplied to the enumerated population at the beginning of the intercensal period, yields the "expected" population for the end of the intercensal period. A comparison of the estimated population for the given period to the actual population enumerated at that period indicates the estimated amount of net migration.

Kim expresses the above procedure in the following manner:

$$t\,Mo = Pt - (S.\ Po)$$

where

M = The net migration between time (t) and time (o)

Pt = The population at time (t)

S = The census survival ratio as applied to:

Po = Population at time (o) [73]

To illustrate the above procedure in using concrete data, the following example might be useful:

The male population aged 10-14 in the state for 1950 was enumerated to have been 31,484. According to the assumption inherent in tabulating the survival ratios, this cohort would not have been subject to any migration as the population is viewed to be "closed." It was enumerated, then, that the male population aged 20-24 in 1960 was 28,285. By dividing $\frac{28,285}{31,484}$, the survival ratio derived is .8983928. This survival ratio when applied to the 1950 male population of any specific SMSA who are in age group 10-14 will result in the "expected" population of males 20-24 in

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[73]Yun Kim, Population of Korea..., op. cit. Appendix A, p. 351.

1960. As an example, the male population of Salt Lake City SMSA during 1950 in age group 10-14 was 10,949. When applying the derived survival ratio, the result will be the expected population of S.L.C. males 20-24 in 1960.

Thus:

$$10,949 \times .8983928 = 9836$$

So, the expected population of males aged 20-24 in Salt Lake City SMSA for 1960 is 9,836. However, the actual enumerated census population for the same cohort in 1960 was 11,858. The "actual" population of the cohort in 1960 when compared to the "expected" population yields the net migration estimate. In other words:

$$11,858 - 9,836 = +2022$$

Thus, the estimate is that between 1950 and 1960 there were 2022 males aged 20-24 who in-migrated to the Salt Lake City SMSA. This same procedure is followed for each age-sex group of the SMSA's in the state to arrive at the estimated net migration.

Obviously, to estimate the migrants in age groups 0-4 and 5-9, this procedure cannot be followed. Thus, the estimate of migrants under 10 years of age is derived by focusing upon the number of children born per women in their reproductive period, i.e. 15-54. To estimate the number of migrating children, the first step is to derive the number of females in the specific region at the end of the ten year period. This number is, of course, taken from the actual population figures, i.e. number of women 15-49 in 1950, or the number of women 15-49 in 1960. The second step is to obtain the number of young males and females of the same period. The third step is to divide the number of children aged 0-4 in 1960 by the number of females aged 15-49 years in 1960 to obtain the ratio of the children born during the 1950-60 period to the females in that reproductive age period. Thus, this proportion or f1 is derived by:

$$f1 = \frac{\text{Number of Children (male-female) 0-4, 1960}}{\text{Number of Women 15-49, 1960}}$$

Then this proportion is applied to the estimated number of females of the same age group in the migrating population, to obtain the expected "total" number of children 0-4 born to the migrating mother.

This procedure will have to be repeated for male and female children separately. During the intercensal period aging takes place, since the population 0-4 is born in the latter half of the ten-year period, then half of the children need to be counted, since one-half of the children 0-4 could have been born after their mothers moved into the area and these in turn constitute one-half of the five-year age group, then the actual migrating children are one-fourth of the children 0-4.

Thus:

f1 X migrating women 15-49 = total children 0-4 X 1/4

The result of this procedure yields the estimated number of migrating children 0-4 for the entire intercensal period.

For the age group 5-9, the number of women in age group 20 to 54 is utilized. Since these children had been born at the beginning of the intercensal period and not the latter half of it as was the case in the previous age group, then one-half have been born prior to the migration period. Also, since migration could have occurred throughout the period, then one-half of the last half of the period or one-fourth would have to be added, and three-fourths of the children are considered as migrants.

Thus:

f2 X migrating women 20-54 = Total children 5-9 X 3/4

The above procedure is used in estimating the net migrants under 10 years of age for each SMSA. This formula holds true when using either the census survival

ratio or life table survival ratio method.[74]

Reliability

The reliability of the census survival ratios as a method for estimating net migration is obviously dependent upon the accuracy of the census figures. The errors introduced in enumerations are always a hindering factor. However, it is agreed that the census survival ratios when applied to a closed population are quite reliable because of the correction factor when errors due to age reporting occur in the census. These errors, in a sense, cancel each other out.[75] Lee also indicates that the census survival ratios are most reliable, when compared to other available indirect methods, while studying internal migration.[76] It should also be pointed out that of the two most widely used indirect methods of estimating net migrations (census survival ratio and life table survival ratio), the census survival ratio method is most accurate and most preferred.[77] The estimates of migration by using both indirect methods enchance the reliability of the findings, but, throughout the analyses, the census survival ratio results are used. Here again, it needs to be added that applicability of these methods to the state or SMSA population is perhaps a shortcoming in this study. However, in regard to the assumption and their modification for local populations (SMSA's), the results are expected to be rather accurate and perhaps the best that can be obtained vis-a-vis the data.

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[74]For a full, but vague, discussion, see: E.S. Lee, et al, Population Redistribution..., op. cit.

[75]C. H. Hamilton and F.M. Henderson, "Use of the Survival Ratio" op. cit., p. 200.

[76]E. S. Lee et al, Ibid. p. 256.

[77]Ibid., p. 250.

Sources of Data and Survival Ratios

The primary source of data for this study is the United States census. More specifically, the census data for 1950, 1960 and 1970 as published by the U.S. Bureau of the Census are used extensively. The data pertain to the Utah population and its characteristics for the three censuses. The emphasis has been placed on the enumerated population for the three Standard Metropolitan Statistical Areas of Ogden, Provo-Orem, and Salt Lake City by age and sex. Also, Utah State Life Tables for the period 1950 to 1960 which are published by the Public Health Service will be used as well. The Utah life table for 1970 was constructed by the author to derive the average life table survival rates for 1960-1970.

Table 5, which follows, shows the enumerated population of the State of Utah for 1950, 1960 and 1970. The census survival ratios shown in tables 6 and 7 are derived from the data presented in table 5, while the life table survival ratios for 1950-60 and 1960-70 are presented in tables 8 and 9. These survival rates are then applied to the enumerated population of the three SMSA's for 1950 and 1960 to find the expected population in 1960 and 1970. The actual enumerated population of the SMSA's from the three censuses are given in tables 10 through 18.

Figures 1 and 2 show the graphic comparison of the census survival ratios and the life table survival ratios. As indicated earlier, the life table survival rates are taken from the Px values of constructed life tables for the state. Life table survival rates follow a hypothetical population from birth to death. This population is, of course, closed, on the other hand, the census survival rates are not smoothed or adjusted; they are taken from the actual enumerated population.

Note that, if the CSR and LTSR are accurate and represent the probability of survival from mortality and net migration for the State of Utah, and from mortality, respectively, then any differences in migration estimates by the two methods may be representing the out-of-state migrants for the SMSA's.

Table 5: Enumerated state's total population: 1950, 1960, and 1970.

Age	1950 Males	1950 Females	1960 Males	1960 Females	1970 Males	1970 Females
0-4	48,054	45,253	64,419	61,790	57,300	54,498
5-9	38,765	36,641	58,052	55,444	59,530	57,649
10-14	31,484	30,782	48,332	46,255	63,062	60,510
15-19	28,151	28,940	37,435	38,781	58,215	58,392
20-24	27,291	28,496	28,285	32,247	46,185	51,674
25-29	27,722	27,325	28,722	28,289	35,966	36,201
30-34	25,182	24,892	28,046	27,685	28,652	29,142
35-39	22,995	22,477	27,205	27,330	26,320	27,238
40-44	20,564	19,901	25,255	24,943	26,937	27,053
45-49	17,453	16,541	22,640	22,078	25,892	26,619
50-54	15,378	14,706	19,389	19,069	23,904	24,568
55-59	13,079	12,627	16,063	16,097	20,378	20,848
60-64	11,082	10,663	13,204	13,617	16,927	18,052
65-69	8,685	8,820	10,725	11,433	12,536	14,484
70-74	5,802	6,098	8,156	9,076	9,387	11,768
75-79	5,096	5,943	5,169	6,267	6,125	8,401
80-84	853*	1,121*	2,484	3,396	3,597	5,266
85 +			1,345	1,906	2,352	3,645
TOTAL	347,636	341,226	444,924	445,703	523,265	536,008

*Age group 80 +

Table 6: Census Survival Ratios: Utah 1950-1960*

Age	Males	Females
0-4	1.0057850	1.0221422
5-9	.9656907	1.0584045
10-14	.8983928	1.0475927
15-19	1.0202834	.9775052
20-24	1.0276648	.9715399
25-29	.9813505	1.0001830
30-34	1.0028989	1.0020488
35-39	.9845618	.9822458
40-44	.9428613	.9581930
45-49	.9203575	.9731576
50-54	.8586292	.9259486
55-59	.8200168	.9054407
60-64	.7359682	.8511676
65-69	.5951641	.7105442
70-74	.4281282	.5569039
75 +	.2260884	.2698188

*Tabulated from data in Table 5.

Table 7: Census Survival Ratios: Utah 1960-1970*

Age	Males	Females
0-4	.9789348	.9792847
5-9	1.0028078	1.0531708
10-14	.9555781	1.1171549
15-19	.9607586	.9334726
20-24	1.0129751	.9037119
25-29	.9163707	.9628477
30-34	.9604578	.9771717
35-39	.9517368	.9739846
40-44	.9465056	.9849657
45-49	.9000883	.9442884
50-54	.8730208	.9466674
55-59	.7804271	.8997950
60-64	.7109209	.8642138
65-69	.5710956	.7348028
70-74	.4410250	.5802115
75 +	.2260884	.3150661

*Tabulated from data in Table 5.

Table 8: Life Table Survival Ratios: Utah 1950-1960

Age	Males	Females
0-4	.99119	.99378
5-9	.99062	.99428
10-14	.98591	.99286
15-19	.98260	.99197
20-24	.98153	.99079
25-29	.97963	.98858
30-34	.97151	.98427
35-39	.95481	.97615
40-44	.93232	.96412
45-49	.89868	.94569
50-54	.84781	.91833
55-59	.78114	.87802
60-64	.69263	.81288
65-69	.56954	.69683
70-74	.41654	.52665
75 +	.22419	.28707

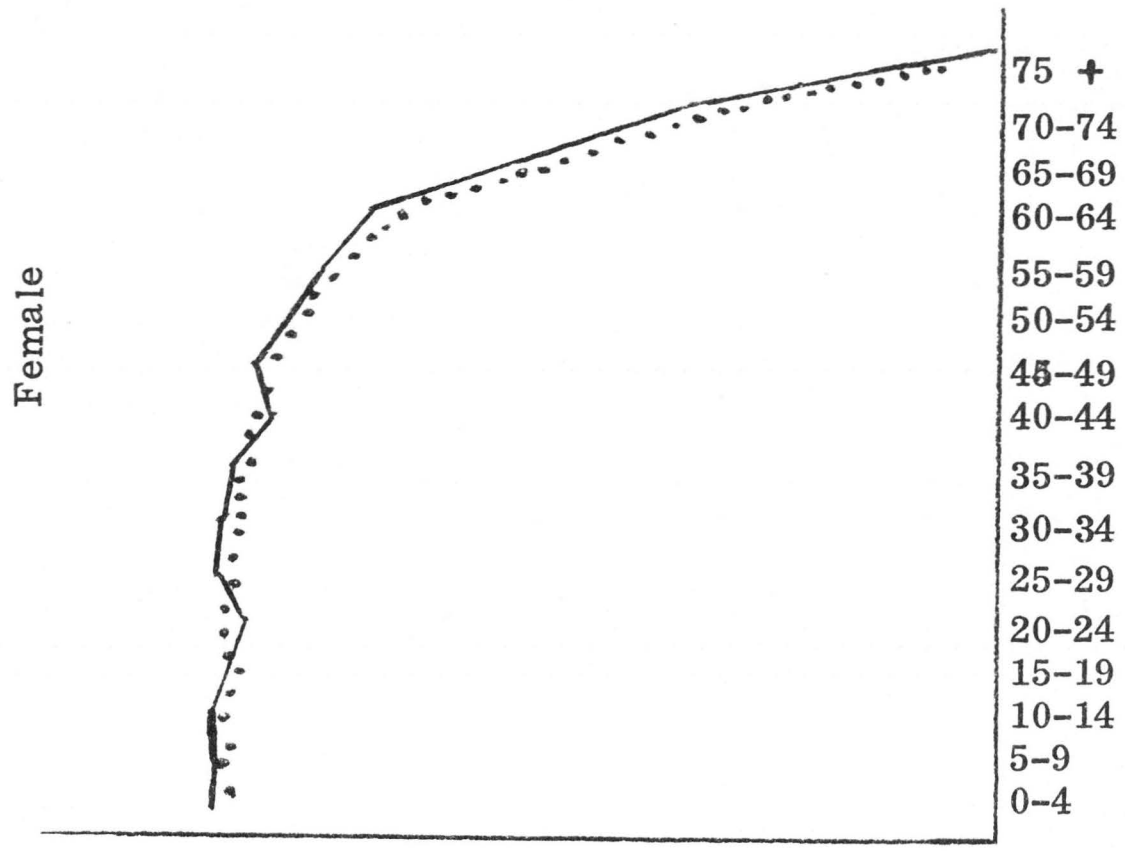
Source: Public Health Service, Utah State Life Tables: 1959-61, Vol. 2, No. 45 (Washington, D.C.: U.S. Dept. Health, Education and Welfare, 1966), pp. 627-635.

Table 9: Life Table Survival Ratios: Utah 1960-1970

Age	Males	Females
0-4	.99323	.99491
5-9	.99399	.99375
10-14	.99051	.99271
15-19	.98739	.99428
20-24	.98657	.99345
25-29	.98559	.99207
30-34	.98064	.98921
35-39	.97006	.98378
40-44	.95407	.97610
45-49	.93213	.96415
50-54	.89538	.94553
55-59	.84672	.91755
60-64	.78010	.87284
65-69	.68891	.78715
70-74	.57210	.68048
75-79	.29394	.34688

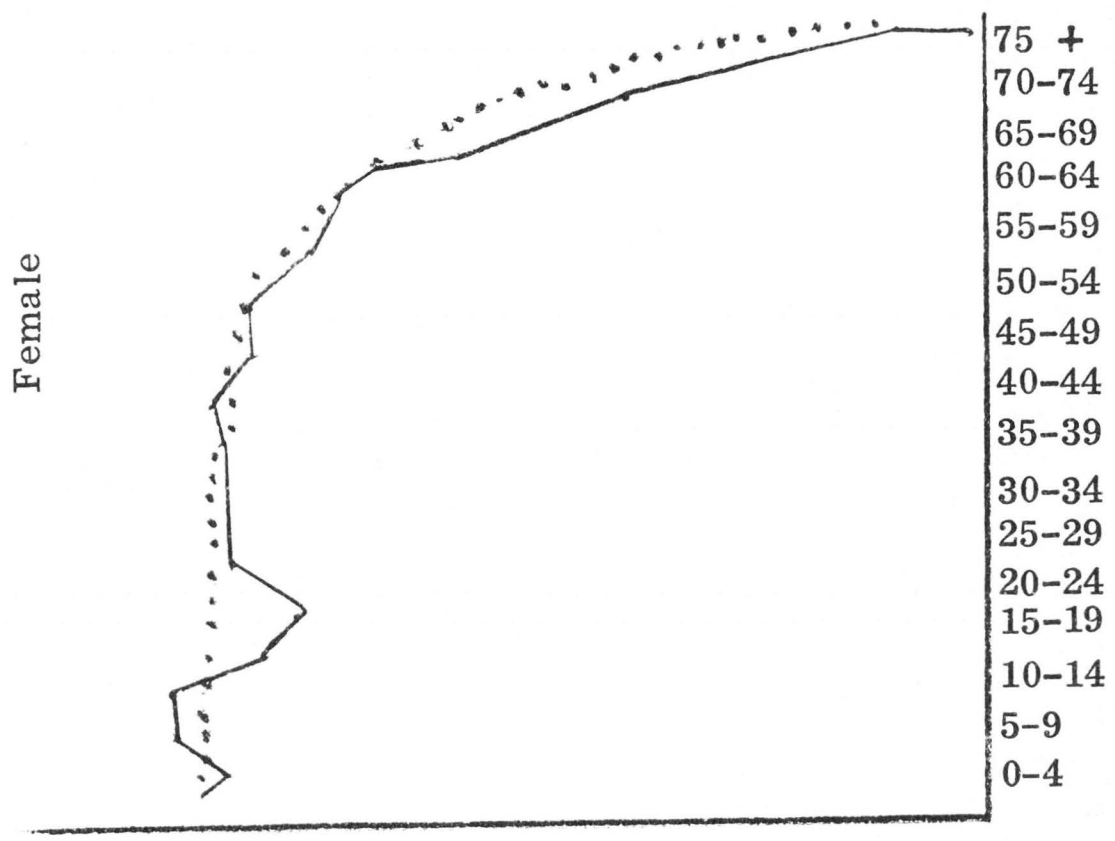
Source: From Life Table constructed by the author.

Figure 1. Census Survival Ratios and Life Table Survival Ratios: 1950-60



Source: Tables 6 and 8

Figure 2. Census Survival Ratios and Life Table Survival Ratios: 1960-70



Source: Tables 7 and 9

Table 10: Enumerated population of Salt Lake City SMSA: 1950

Age	Male	Female
0-4	18,358	17,366
5-9	14,293	13,636
10-14	10,949	10,796
15-19	9,768	10,418
20-24	10,725	11,920
25-29	11,812	11,888
30-34	10,533	10,580
35-39	9,336	9,380
40-44	8,408	8,523
45-49	7,226	7,179
50-54	6,498	6,495
55-59	5,422	5,448
60-64	4,580	4,776
65-69	3,705	4,015
70-74	2,459	2,786
75-84	2,081	2,684
85 +	355	500
TOTAL	136,508	138,387

Table 11: Adjusted Enumerated Population of Provo-Orem SMSA*: 1950

Age	Male	Female
0-4	5,797	5,424
5-9	4,805	4,453
10-14	4,054	3,868
15-19	3,957	4,115
20-24	3,790	3,930
25-29	3,183	3,009
30-34	2,841	3,820
35-39	2,602	2,643
40-44	2,329	2,162
45-49	1,916	1,789
50-54	1,630	1,556
55-59	1,287	1,333
60-64	1,107	1,111
65-69	881	943
70-74	572	634
75-84	508	652
85 +	86	125
TOTAL	41,385	40,507

*Utah County population which is equivalent to Provo-Orem SMSA of 1950.

Table 12: Enumerated Population of Ogden SMSA: 1950

Age	Male	Female
0-4	5,896	5,566
5-9	4,572	4,314
10-14	3,584	3,525
15-19	3,072	3,350
20-24	2,853	3,300
25-29	3,420	3,580
30-34	3,164	3,155
35-39	2,875	2,778
40-44	2,517	2,545
45-49	2,152	2,101
50-54	1,956	1,852
55-59	1,686	1,679
60-64	1,454	1,314
65-69	1,094	1,032
70-74	698	727
75-84	616	655
85 +	108	129
TOTAL	41,717	41,602

Table 13: Adjusted Enumerated Population of Salt Lake City SMSA* 1960

Age	Male	Female
0-4	33,111	32,080
5-9	29,234	28,083
10-14	23,493	22,552
15-19	17,028	18,208
20-24	13,722	16,322
25-29	14,990	15,136
30-34	15,006	14,794
35-39	14,598	14,645
40-44	12,912	12,652
45-49	10,917	10,915
50-54	9,466	9,590
55-59	7,692	8,048
60-64	6,436	6,870
65-69	5,085	5,680
70-74	3,843	4,537
75-79	2,468	3,189
80-84	1,139	1,750
80 +	611	1,002
TOTAL	220,751	227,044

*Davis County was added to Salt Lake County population of 1960 which adjusts the population to the 1970 definition of Salt Lake City SMSA.

Table 14: Enumerated population of Provo-Orem SMSA: 1960

Age	Male	Female
0-4	7,681	7,190
5-9	6,931	6,515
10-14	5,766	5,548
15-19	5,491	5,951
20-24	4,529	5,239
25-29	3,849	3,296
30-34	3,105	3,073
35-39	2,803	2,872
40-44	2,755	2,766
45-49	2,558	2,528
50-54	2,149	2,048
55-59	1,726	1,693
60-64	1,348	1,402
65-69	1,078	1,200
70-74	801	970
75-79	530	634
80-84	262	349
85 +	138	217
TOTAL	53,500	53,491

Table 15: Enumerated population of Ogden SMSA: 1960

Age	Male	Female
0-4	7,817	7,492
5-9	7,236	6,914
10-14	6,221	5,940
15-19	4,494	4,607
20-24	2,922	3,468
25-29	3,273	3,313
30-34	3,487	3,481
35-39	3,653	3,738
40-44	3,409	3,254
45-49	3,010	2,896
50-54	2,465	2,465
55-59	2,063	2,072
60-64	1,678	1,727
65-69	1,377	1,532
70-74	1,087	1,157
75-79	634	749
80-84	315	415
85 +	168	215
TOTAL	55,309	55,435

Table 16: Enumerated population of Salt Lake City SMSA: 1970

Age	Male	Female
0-4	30,842	29,509
5-9	32,653	31,662
10-14	33,438	32,473
15-19	29,246	28,533
20-24	21,665	24,930
25-29	19,678	20,835
30-34	16,392	16,617
35-39	14,609	15,173
40-44	14,712	14,721
45-49	14,136	14,447
50-54	12,336	12,763
55-59	10,009	10,417
60-64	8,270	9,083
65-69	5,934	7,237
70-74	4,480	6,032
75-79	2,914	4,334
80-84	1,669	2,718
85 +	1,164	1,974
TOTAL	274,177	283,458

Table 17: Enumerated population of Provo-Orem SMSA: 1970

Age	Male	Female
0-4	7,735	7,332
5-9	6,879	6,526
10-14	7,442	6,933
15-19	8,408	9,837
20-24	10,152	11,468
25-29	5,362	4,527
30-34	4,180	3,118
35-39	2,837	2,975
40-44	2,908	2,956
45-49	2,662	2,769
50-54	2,537	2,669
55-59	2,229	2,370
60-64	1,848	1,954
65-69	1,405	1,556
70-74	1,016	1,215
75-79	603	851
80-84	350	576
85 +	228	363
TOTAL	67,781	69,995

Table 18: Enumerated population of Ogden SMSA: 1970

Age	Male	Female
0-4	6,426	6,124
5-9	6,721	6,496
10-14	7,530	7,180
15-19	6,933	7,005
20-24	5,369	6,093
25-29	4,017	3,920
30-34	3,115	3,279
35-39	3,125	3,233
40-44	3,329	3,445
45-49	3,408	3,673
50-54	4,208	3,154
55-59	2,612	2,689
60-64	2,079	2,298
65-69	1,572	1,862
70-74	1,115	1,489
75-79	742	1,128
80-84	501	659
85 +	299	450
TOTAL	62,101	64,177

MEASUREMENT OF POPULATION REDISTRIBUTION

Estimates of Net Migration by Age and Sex

This section is devoted to measurement of net migration for the Standard Metropolitan Statistical Areas of Utah between 1950 and 1970. Using the census survival ratios given in tables 6 and 7, the life table survival ratios given in tables 8 and 9, and the enumerated population given in tables 10 through 18, net migration for the three SMSA's was estimated.

However, between 1960 and 1970 there have been two significant changes in the boundaries of the respective SMSA's. In the first place, the Provo-Orem area became a SMSA for the first time in 1960. Therefore, in estimating net migration to this SMSA for the 1950-60 period, the 1950 base population is that of Utah County which is the equivalent area of Provo-Orem SMSA in 1960. Secondly, between the censuses of 1960 and 1970, Salt Lake City SMSA was extended to include Davis County. Thus, the base population of Salt Lake City SMSA in 1960 is adjusted to reflect this rather significant boundary change. As can be seen from tables 19 through 30, the net migration estimates have been tabulated by taking into consideration these boundary changes.

Tables 19-24 present the estimated net migration by age and sex between 1950-60 and 1960-70 for the three SMSA's by the census survival ratio method. The estimates of net migration for the three SMSA's between 1950-60 and 1960-70 by the life table survival ratio method are given in tables 25 through 30. Table 31 shows the estimated inter-state migration by the two different methods for those areas for the two decades.

Tables 19, 20 and 21 refer to the estimates of net migration for the three SMSA's between 1950 and 1960, while tables 22, 23 and 24 are related to net migration for the same regions for the period 1960 to 1970. These estimates are arrived at by utilizing the census survival ratio method.

Tables 25, 26, and 27 are estimates of net migration for the three SMSA's between 1950 and 1960 and tables 28, 29 and 30 are estimates for 1960-70. The latter six tables are estimates of net migration based on the life table survival ratio method.

Table 19: Estimates of net migration for Salt Lake City SMSA from Census Survival Ratio Method, 1950-1960.

Age	Male	Female	Total (both Sexes)
0-4	620	598	1,218
5-9	1,572	1,512	3,084
10-14	1,170	1,128	2,298
15-19	817	1,317	2,134
20-24	2,022	2,985	5,007
25-29	2,720	2,548	5,268
30-34	1,512	798	2,310
35-39	516	357	873
40-44	420	377	797
45-49	382	479	861
50-54	470	520	990
55-59	324	329	653
60-64	274	276	550
65-69	182	289	471
70-74	150	127	277
75-79	77	107	184
80-84	- 5	92	87
85	14	71	85
TOTAL	13,237	13,910	27,147

Table 20: Estimates of net migration for Provo-Orem SMSA from Census Survival Ratio Method, 1950-1960

Age	Male	Female	Total (both Sexes)
0-4	50	47	97
5-9	- 124	- 115	- 239
10-14	- 64	4	- 60
15-19	851	1,238	2,089
20-24	483	1,187	1,670
25-29	- 188	- 726	- 914
30-34	- 790	- 745	-1,535
35-39	- 321	- 132	- 453
40-44	- 94	- 60	- 154
45-49	- 4	- 68	- 72
50-54	- 47	- 24	- 71
55-59	- 37	- 48	- 85
60-64	- 51	- 39	- 90
65-69	23	- 7	16
70-74	- 14	24	10
75-79	6	- 36	- 30
80-84	- 207	- 4	- 211
85	4	7	11
TOTAL	- 524	503	- 21

Table 21: Estimates of net migration for Ogden SMSA from Census Survival Ratio Method, 1950-1960

Age	Male	Female	Total (both sexes)
0-4	41	38	79
5-9	111	107	218
10-14	291	251	- 542
15-19	79	41	120
20-24	- 298	- 225	- 523
25-29	139	38	177
30-34	555	275	830
35-59	297	158	455
40-44	236	93	329
45-49	179	167	346
50-54	92	26	118
55-59	82	27	109
60-64	- 1	12	11
65-69	- 5	12	7
70-74	17	39	56
75-79	- 17	16	- 1
80-84	16	10	26
85	4	4	8
TOTAL	1,818	1,089	2,907

Table 22: Estimates of net migration for Salt Lake City SMSA from Census Survival Ratio Method, 1960-1970

Age	Male	Female	Total (both sexes)
0-4	368	354	722
5-9	1,591	1,537	3,128
10-14	1,025	1,058	2,083
15-19	- 70	- 1,043	- 1,113
20-24	- 784	- 264	- 1,048
25-29	3,318	3,838	7,156
30-34	2,492	1,867	4,359
35-39	873	599	1,472
40-44	299	265	564
45-49	243	183	426
50-54	115	301	416
55-59	183	110	293
60-64	6	50	56
65-69	- 67	- 4	- 73
70-74	- 95	95	0
75-79	10	160	170
80-84	- 26	86	60
85	65	102	167
TOTAL	9,544	9,294	18,838

Table 23: Estimates of net migration for Provo-Orem SMSA from Census Survival Ratio Method, 1960-1970.

Age	Male	Female	Total (both sexes)
0-4	319	293	612
5-9	448	413	861
10-14	- 77	- 108	- 185
15-19	1,458	2,976	4,434
20-24	4,642	5,270	9,912
25-29	87	- 1,028	- 941
30-34	- 1,408	- 1,616	- 3,024
35-39	- 690	- 198	- 888
40-44	- 74	- 47	- 121
45-49	- 6	- 28	- 34
50-54	- 71	- 55	- 126
55-59	- 73	- 17	- 90
60-64	- 28	15	- 13
65-69	58	33	91
70-74	58	3	61
75-79	- 13	- 30	- 43
80-84	- 3	13	10
85	- 14	- 15	- 29
TOTAL	4,613	5,871	10,484

Table 24: Estimates of net migration for Ogden SMSA from Census Survival Ratio Method, 1960-1970.

Age	Male	Female	Total (both sexes)
0-4	- 58	- 56	- 114
5-9	- 148	- 143	- 291
10-14	- 122	- 157	- 279
15-19	- 323	- 277	- 600
20-24	- 575	- 543	- 1,118
25-29	- 301	- 380	- 681
30-34	155	145	300
35-39	126	43	169
40-44	- 20	44	24
45-49	- 69	33	- 36
50-54	- 19	- 51	- 70
55-59	- 97	- 46	- 143
60-64	- 73	- 35	- 108
65-69	- 38	- 2	- 40
70-74	- 77	6	- 71
75-79	- 44	2	- 42
80-84	22	- 12	10
85	8	16	24
TOTAL	- 1,653	- 1,413	- 3,066

Table 25: Estimates of net migration for Salt Lake City SMSA from Life Table Survival Ratio Method, 1950-1960.

Age	Male	Female	Total (both sexes)
0-4	722	697	1,419
5-9	1,677	1,612	3,289
10-14	1,438	1,620	3,058
15-19	461	2,191	2,652
20-24	1,063	3,576	4,639
25-29	3,088	2,398	5,486
30-34	2,007	569	2,076
35-39	537	495	1,032
40-44	750	565	1,315
45-49	660	527	1,187
50-54	555	470	1,025
55-59	480	526	1,006
60-64	344	325	669
65-69	393	439	832
70-74	349	310	659
75-79	172	162	334
80-84	24	176	200
85	18	16	34
TOTAL	14,738	16,674	31,457

Table 26: Estimates of net migration for Provo-Orem SMSA from Life Table Survival Ratio Method, 1950-1960.

Age	Male	Female	Total (both sexes)
0-4	84	78	162
5-9	- 89	- 82	- 171
10-14	20	158	178
15-19	731	1,524	2,255
20-24	532	1,399	1,931
25-29	- 39	- 786	- 825
30-34	- 615	- 821	- 1,436
35-39	- 315	- 103	- 418
40-44	- 5	- 10	- 15
45-49	74	- 52	22
50-54	- 22	- 36	- 58
55-59	4	1	5
60-64	- 34	- 27	- 61
65-69	73	30	103
70-74	33	67	100
75-79	28	- 23	5
80-84	24	15	39
85	5	- 6	- 1
TOTAL	489	1,326	1,815

Table 27: Estimates of net migration for Ogden SMSA from Life Table Survival Ratio Method 1950-1960.

Age	Male	Female	Total (both sexes)
0-4	27	26	53
5-9	9	9	18
10-14	377	409	786
15-19	- 35	- 334	- 369
20-24	- 611	- 32	- 643
25-29	255	- 10	245
30-34	687	211	898
35-39	303	199	502
40-44	335	149	484
45-49	265	184	449
50-54	118	11	129
55-59	129	85	214
60-64	20	26	46
65-69	60	58	118
70-74	80	89	169
75-79	11	30	41
80-84	24	32	56
80	6	- 10	- 4
TOTAL	2,060	1,132	3,192

Table 28: Estimates of net migration for Salt Lake City SMSA from Life Table Survival Ratio Method, 1960-1970.

Age	Male	Female	Total (both sexes)
0-4	477	428	905
5-9	1,386	1,338	2,724
10-14	551	556	1,107
15-19	188	626	814
20-24	- 1,605	2,543	938
25-29	2,865	2,731	5,596
30-34	2,854	402	3,256
35-39	- 165	157	- 8
40-44	- 3	87	84
45-49	- 25	40	15
50-54	17	413	430
55-59	- 167	- 107	- 274
60-64	- 206	15	- 191
65-69	- 579	- 111	- 690
70-74	- 541	360	- 181
75-79	- 589	- 194	- 783
80-84	- 529	- 369	- 898
80	- 76	- 87	- 163
TOTAL	7,653	8,828	16,481

Table 29: Estimates of net migration for Provo-Orem SMSA from Life Table Survival Ratio Method, 1960-1970.

Age	Male	Female	Total (both sexes)
0-4	325	298	623
5-9	393	363	756
10-14	- 187	- 220	- 407
15-19	1,519	3,363	4,882
20-24	4,441	5,961	10,402
25-29	- 60	- 1,390	- 1,450
30-34	- 1,288	- 2,087	- 3,375
35-39	- 956	- 295	- 1,251
40-44	- 137	- 84	- 221
45-49	- 57	- 56	- 113
50-54	- 91	- 31	- 122
55-59	- 155	- 67	- 222
60-64	- 76	18	- 58
65-69	- 56	3	- 53
70-74	- 36	- 9	- 45
75-79	- 140	- 105	- 245
80-84	- 108	- 85	- 193
85	- 45	- 53	- 98
TOTAL	3,286	5,254	8,540

Table 30: Estimates of net migration for Ogden SMSA from Life Table Survival Ratio Method, 1960-1970.

Age	Male	Female	Total (both sexes)
0-4	- 35	- 33	- 68
5-9	- 94	- 90	- 184
10-14	- 234	- 274	- 508
15-19	- 259	134	- 125
20-24	- 793	196	- 597
25-29	- 420	- 661	- 1,081
30-34	232	- 166	66
35-39	- 101	- 54	- 155
40-44	- 90	2	- 88
45-49	- 136	- 4	- 140
50-54	- 44	- 22	- 66
55-59	- 194	- 103	- 297
60-64	- 128	- 33	- 161
65-69	- 175	- 39	- 214
70-74	- 194	- 18	- 212
75-79	- 207	- 93	- 300
80-84	- 121	- 128	- 249
85	- 29	- 28	- 57
TOTAL	- 3,022	- 1,414	- 4,436

A General Overview of the Findings

Between 1950 and 1960, two of Utah's metropolitan areas, Salt Lake SMSA and Ogden SMSA show a net in-migration for this period. Salt Lake SMSA's population increased from 274,895 persons in 1950 to 383,035 persons in 1960. Of the total change of 108,140, 25.14 percent was due to net in-migration. The amount of in-migration was 27,150. All age groups showed gains through in-migration in the case of Salt Lake with age groups 20-24 years, 25-29 years, and 30-34 years, demonstrating the highest net gains. Females did outnumber males among the migrants. There were 13,910 female migrants as compared to 13,237 male migrants.

The population of Ogden metropolitan area grew by 27,425 between 1950 and 1960. 10.56 percent of this growth, or 2,907; was due to net migration. All age groups show in-migration with the exception of the 20-24 category. In the case of Ogden, males outnumbered the female migrants 1,818 persons to 1,089 persons. Perhaps the location of the Air Force base and the defense depot are reasons for male selectivity vis-a-vis the migrants.

The population of Provo-Orem metropolitan area changed from 81,912 persons in 1950 to 106,991 persons in 1960; a gain of 25,079. However, there was a net out-migration of 21 persons for this area during the period. All the growth, then, was due to natural population growth. Most age groups demonstrated a net out-migration for this area with the exception of age groups 15-19 years and 20-24 years. There were 3,759 in-migrants for these two age groups. In other words, the growth of population in age groups 15-19 and 20-24 were through net migration by 61.99 percent and 81.54 percent respectively. It is interesting to note that the location of Brigham Young University in Provo can, perhaps, account

for the net in-migration of the two young age groups to this SMSA. Also, among the in-migrants in these two age groups, the females outnumber the males. For example, in age group 20-24, there were 483 male in-migrants in contrast to 1,187 female in-migrants. This pattern also holds for age group 15-19 where there were 851 male in-migrants as opposed to 1,238 female in-migrants. The low sex ratio at Brigham Young University can also be paralleled to the female selectivity among the young in-migrants. Regarding the over-all sex distribution of migrants, it is interesting to note that total net out-migration for males was -524, while the total net migration for females was +503, hence, there was a net migration of -21 for the SMSA as a whole. In other words, while some males left the Provo-Orem SMSA between 1950 and 1960, almost the same amount of females in-migrated to the area. A word of caution needs to be added here regarding the status of the students in the 1950 Census of population. Since the student population was enumerated not in the college locality, but the "home town", then a number of out-of-state students (migrants) were not included in the 1950 Provo population. This factor should be considered while viewing the patterns of net migration for 1950-60 period.

The estimated total net migration between 1950 and 1960 for the three SMSA's is as follows:

SMSA	Population in 1950	Population in 1960	INCREASE* Total	Reproductive Change	Net Migration
Salt Lake City	274,895	383,035	108,140 (100.00)	80,990 (74.86)	27,150 (25.14)
Provo-Orem	81,912	106,991	25,079 (100.00)	25,098 (100.08)	-21 (-0.08)
Ogden	83,319	110,744	27,425 (100.00)	24,518 (89.44)	2,907 (10.56)

*Percent change is given in the parenthesis.

The pattern of net migration for the 1960-70 period changed markedly from the previous decade for Ogden and Provo-Orem areas, but remained somewhat the same for Salt Lake SMSA. The population of Salt Lake Metropolitan area grew by 109,840; from 447,795 in 1960 to 557,635 in 1970. Of the 109,840 growth in population, 17.15 percent or 18,838 was due to net in-migration. There was net in-migration for all but three age groups. Age groups 15-19 years and 20-24 years showed out-migration of 2,151 persons while there was an out-migration of 73 people in age group 65-69 years. Male migrants slightly outnumbered the female migrants 9,544 to 9,294. Age group 25-34 years accounted for the largest amount of net in-migration to this SMSA where 11,515 persons are estimated to have moved in.

Contrary to the 1950-60 decade, the Provo-Orem area gained a substantial proportion of its growth through net in-migration between 1960 and 1970. The Provo-Orem SMSA population changed from 106,991 in 1960 to 137,776 in 1970. A growth of 30,785 persons of which 10,484 or 34.07 percent was due to net in-migration. The largest amount of in-migration was in age groups 15-19 years and 20-24 years where 4,434 and 9,912 persons in-migrated, respectively. The largest amount of out-migration was evidenced for age groups 30-39 years. Females outnumbered the males in the migrating population 5,871 to 4,613. Again, the large number of female in-migrants in age groups 15-19 and 20-24 could be attributed to the Brigham Young University in Provo.

Ogden SMSA's patterns of net migration reversed somewhat during the 1960-70 period. There was an out-migration of 3,066 or 19.73 percent of population evidenced for this SMSA. Although the total population increased from 110,744 persons in 1960 to 126,278 persons in 1970, a growth of 15,534, yet, this growth is primarily due to natural increase. There was out-migration for most age groups except age groups 30 to 44 years and 80 years and above. Again, most migrants were males as they outnumbered the female migrants 1,653 to 1,413.

The estimated total net migration between 1960 and 1970 for the three SMSA's is as follows:

SMSA	Population in 1950	Population in 1960	INCREASE* Total	Reproductive Change	Net Migration
Salt Lake City	447,795	557,635	109,840 (100.00)	91,002 (82.85)	18,838 (17.15)
Provo-Orem	106,991	137,776	30,785 (100.00)	20,301 (65.93)	10,484 (34.07)
Ogden	110,744	126,534	15,534 (100.00)	18,534 (119.73)	-3,066 (-19.73)

*Percent change is given in the parenthesis.

As discussed in the methodological section, the difference of the net migration estimates from the census survival ratio and life table survival ratio methods, reflects the amount of interstate migration for these three SMSA's. Table 31 shows the difference in the estimated net migration between the CSR and LTSR for Utah SMSA's between 1950 and 1970.

Table 31: Estimates of net migration by CSR and LTSR for the SMSA areas and interstate net migration for Utah SMSA's, 1950-1970.

SMSA	Net Migration Estimates for the SMSA by CSR Method	Net Migration Estimates for the SMSA by LTSR Method	Interstate SMSA Net Migration
Salt Lake City (1950-60)	27,147	31,457	-4,310
Provo-Orem (1950-60)	-21	1,815	-1,826
Ogden (1950-60)	2,907	3,192	-285
Salt Lake City 1960-70)	18,838	16,481	2,357
Provo-Orem (1960-70)	10,487	8,540	1,987
Ogden (1960-70)	-3,066	-4,436	-1,370

It is significant to note that there was an estimated amount of net out-migration from the three SMSA's to other states between 1950 and 1960. Interstate SMSA net migration was estimated to have been -4,310 for Salt Lake City SMSA, -285 for Provo-Orem SMSA, and -1,826 for Ogden SMSA.

It is interesting to note that while for the 1950-60 period there was an estimated loss of population from Utah's SMSA's to other states, the pattern changed somewhat for the 1960-70 period. While there was a loss of 1,370 from Ogden to other states, the Salt Lake and Provo-Orem SMSA's gained through interstate migration 2,357 and 1,987 respectively.

Summary

These over-all patterns suggest a rather mixed process of net in- or out-migration for the metropolitan areas of Utah. The attempt here in this section has been to gain a bird's-eye view of the migratory processes. It is estimated that Salt Lake City SMSA has attracted migrants throughout the past two decades. Ogden and Provo-Orem SMSA's have gained, through migration, in one decade and lost in another. The Provo-Orem SMSA's growth during the 1950-1960 decade was primarily due to natural growth of population. Actually, 21 persons out-migrated from this SMSA between 1950 and 1960. However, during the 1960-70 period, this SMSA's growth was enhanced through in-migration. Contrary to the 1950-60 decade, the Provo-Orem SMSA gained 20,301 persons through in-migration. This figure constitutes 34.07 percent of the total population increase for the Provo-Orem SMSA.

The Ogden SMSA's growth during the 1950-60 decade was affected by in-migration. During this decade, 2,907 persons migrated to this SMSA. In other words, 10.56 percent of this SMSA's growth was due to net in-migration. However, the pattern of Ogden SMSA's net migration changed during the 1960-70 period.

Ogden lost 3,066 persons through out-migration during this decade. In other words, there was a net out-migration of 19.73 percent between 1960 and 1970 for this SMSA. Most migrants were in the younger age groups, regardless of their being in- or out-migrants.

In summary, it should also be added that while all three Utah SMSA's lost a portion of their population through out-migration to other states between 1950 and 1960, the pattern changed somewhat between 1960 and 1970. Both Salt Lake City and Provo-Orem SMSA's gained, between 1960 and 1970, through interstate in-migration. However, the Ogden SMSA's pattern of interstate migration remained the same as in the 1950-60 period, only somewhat accelerated. While Salt Lake City and Provo-Orem SMSA's gained 2,357 and 1,987 persons respectively through interstate migration between 1960 and 1970, Ogden SMSA lost 1,370 persons through this process.

In the following chapter, a detailed analysis of the findings in relation to demographic, economic, and sociological factors of interest is attempted to enhance a broader understanding of the population redistribution processes in the State of Utah.

SOCIO-ECONOMIC AND DEMOGRAPHIC CONSEQUENCES OF POPULATION REDISTRIBUTION

Demographic Consequences of Population Redistribution

Population redistribution in Utah has favored the Standard Metropolitan Statistical Areas. The past two decades are demonstrative of high concentrations of population in the metropolitan areas. The ecological consequences of such redistribution are significant. Man's relationship to his natural environment is certainly affected by his numbers and density. While Utah's population has been growing at a steady rate throughout this century, the distribution of the State's population with regards to the geographic divisions has been rather lop-sided. The central point here is not the growth of population per se, rather the distribution of population. The natural resources of any area are very much fixed. The air, land and water resources, for example, are not subject to immediate quantitative changes. From a distributional point of view, then, it makes a difference whether the population is evenly distributed or highly concentrated in a small portion of the land area. Also, as Duncan and Schnore have pointed out, the ecological complex embraces four important variables: Population, organization, environment, and technology.[76] The relationships between these variables constitute the ecological web of communities. As Duncan and Schnore have indicated, population is a crucial factor:

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[76] Otis D. Duncan and Leo F. Schnore, "Cultural, Behavioral, and Ecological Perspectives in the Study of Social Organization", American Journal of Sociology Vol. LXV, 1959. pp. 132-146.

> Organization is assumed to be a property of the population that has evolved and is sustained in the process of adaptation of the population to its environment, which may include other populations. ...organization tends to be investigated as a ramification of sustenance activities, broadly conceived, which utilize whatever technological apparatus is at the population's disposal or is developed by it.[77]

In essence, the relationship among the aforementioned variables depends upon the quantity of each. In other words, an increase in the size of the population affects the patterns of organization, thus affecting the environment and natural resources.

The recent concentration of the State's population along the Wasatch Front is the point at hand. The ecological implications with regards to quantity and quality of water, air and land are rather significant and subject of special attention. But more central to this study are the demographic patterns which constitute an important variable in the ecological complex. How, in fact, is the population distributed? What is the direction of redistribution? What are the significant attributes regarding the composition of the population? i.e. age, sex, working force. How do these factors relate to the societal needs, i.e. the labor force vis-a-vis the dependent population?

This section's focal point of concern is with the demographic aspects of population redistribution. The migrants who are the crucial factor affecting population redistribution are viewed as the agents of demographic change in this context. The age and sex composition of the migrants is crucial in addition to the total number of migrants. The age composition of the migrants leaves a lasting mark upon the receiving area. For example, if a large number of young females enter an area through migration, the fertility patterns of that area will be substantially affected. The influx of females in their reproductive ages will consequently

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[77]Ibid, pp. 134-35.

affect the future growth rates of the receiving area. Or, a large in-migration of males between the ages of 20 and 40 will certainly affect the labor market of the area. The in-migration of the young and old, if substantial, will push upwards the dependency ratios of the receiving population. The obverse of the above is true if out-migration to any significant degree occurs. This, the age distribution of the migrants in itself is a rather important component of the migration analysis. The same holds true regarding the sex of the migrants. The impact of females in the childbearing period is important. The female participation in the labor force is worthy of consideration. These variables will be analyzed in this section.

Characteristics of the Migrants: Age Differentials

Based upon the pioneering researches of Ravenstein and Thomas,[78] and lately Bogue[79] and Shryock,[80] it was expected that the migrants be in the younger age groups of 20-34 years. Of significant importance here is the distribution of migrants by age as compared to the receiving population. From a demographic point of view, it is more meaningful to know how the migrants vary in their composition with regards to the base population, than simply to observe just how many migrated. Tables 32 and 33 present total net migrants for Utah's SMSA's for the period 1950-70. Also, numbers of male and female migrants for these SMSA's for 1950-70 period are plotted in figures 3, 4, and 5. These figures demonstrate the age selectivity among migrants for the three SMSA's between 1950-60 and 1960-70. Note that in all cases, the number of in-migrants increases rather sharply after the age of 20 and tapers off somewhat later pending on the particular SMSA.

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[78]Dorothy S. Thomas, Research Memorandum, op. cit.

[79]Donald J. Bogue, "Internal Migration", op. cit. pp. 504-508.

[80]Henry S. Shryock, Population Mobility... op. cit.

Figure 3, which demonstrates the age distribution of the migrants for Salt Lake SMSA, is indicative of this young age selectivity among the migrants. The patterns are quite similar for both periods as the peak of migrating age falls between ages 20 and 40 years.

Figure 4 presents the age selectivity among the net migrants for Provo-Orem SMSA between 1950-60 and 1960-70. Here, again, the peak year seems to be 20 and then the number of in-migrants drops sharply. It is important to note, in the case of Provo-Orem SMSA, that although net out-migration is evidenced around ages 30 to 40; the amount of migration throughout the age group 20 to 40 years is substantial.

Figure 5 demonstrates the age selectivity of the migrants for Ogden SMSA. Although the patterns of migration have been somewhat reversed between the 1950-60 and 1960-70 periods, the bulk of the migrants fall in age groups 15 to 40.

In order to demonstrate the age composition of the migrants, the percentage in each age group of the migrating population, as well as the percentages for the receiving SMSA populations in each age group, are presented in tables 34-39. These tables, then, show the relative size of migrants by age groups and at the same time indicate their relative proportions with regards to the actual SMSA populations of 1960 and 1970.

Table 32: Net migration for Utah's SMSA's by age, 1950-1960.

Age	Salt Lake SMSA	Ogden SMSA	Provo-Orem SMSA
0-4	1,218	79	97
5-9	3,084	218	- 239
10-14	2,298	542	- 60
15-19	2,134	120	2,089
20-24	5,007	- 523	1,670
25-29	5,268	177	- 914
30-34	2,310	830	-1,535
35-39	873	455	- 453
40-44	797	329	- 154
45-49	861	346	- 72
50-54	990	118	- 71
55-59	653	109	- 85
60-64	550	11	- 90
65-69	471	7	16
70-74	277	56	10
75-79	184	- 1	- 30
80-84	87	26	- 211
85 +	85	8	11
TOTAL (all ages)	27,147	2,907	- 21

Table 33: Net migration for Utah's SMSA's by age 1960-1970

Age	Salt Lake SMSA	Ogden SMSA	Provo-Orem SMSA
0-4	722	- 114	612
5-9	3,182	- 291	861
10-14	2,083	- 279	- 185
15-19	-1,113	- 600	4,434
20-24	-1,048	-1,118	9,912
25-29	7,156	- 681	- 941
30-34	4,359	300	-3,024
35-39	1,472	169	- 888
40-44	564	24	- 121
45-49	426	- 36	- 34
50-54	416	70	- 126
55-59	293	- 143	- 90
60-64	56	- 108	- 13
65-69	- 73	- 40	91
70-74	0	- 71	61
75-79	170	- 42	43
80-84	60	10	10
85 +	167	24	- 29
TOTAL (all ages)	18,834	-3,066	10,487

Figure 3: Age Distribution of Migrants to and from the SMSA's by decade; Salt Lake City.

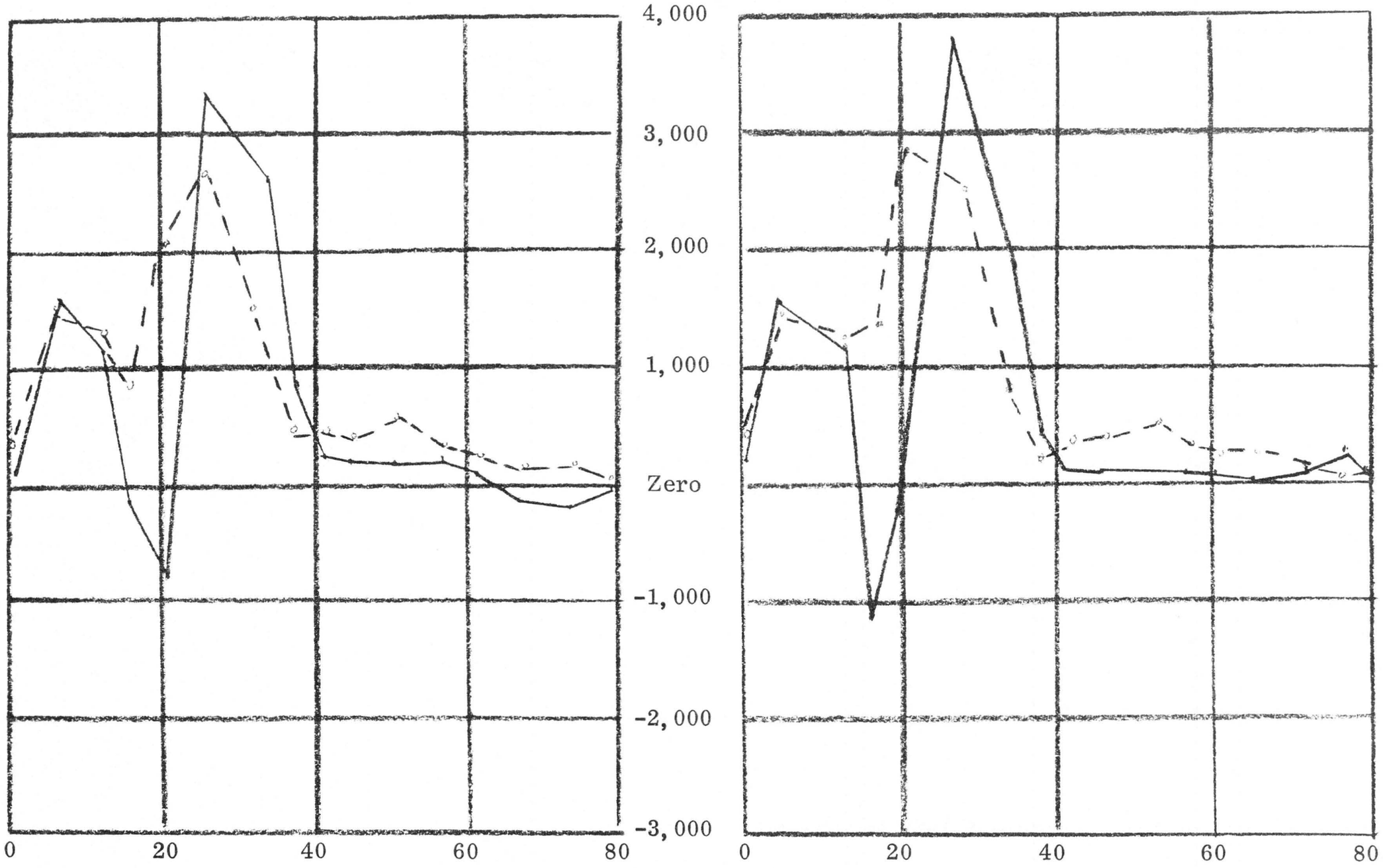

Figure 4: Age Distribution of Migrants to and from the SMSA's by decade; Provo-Orem.

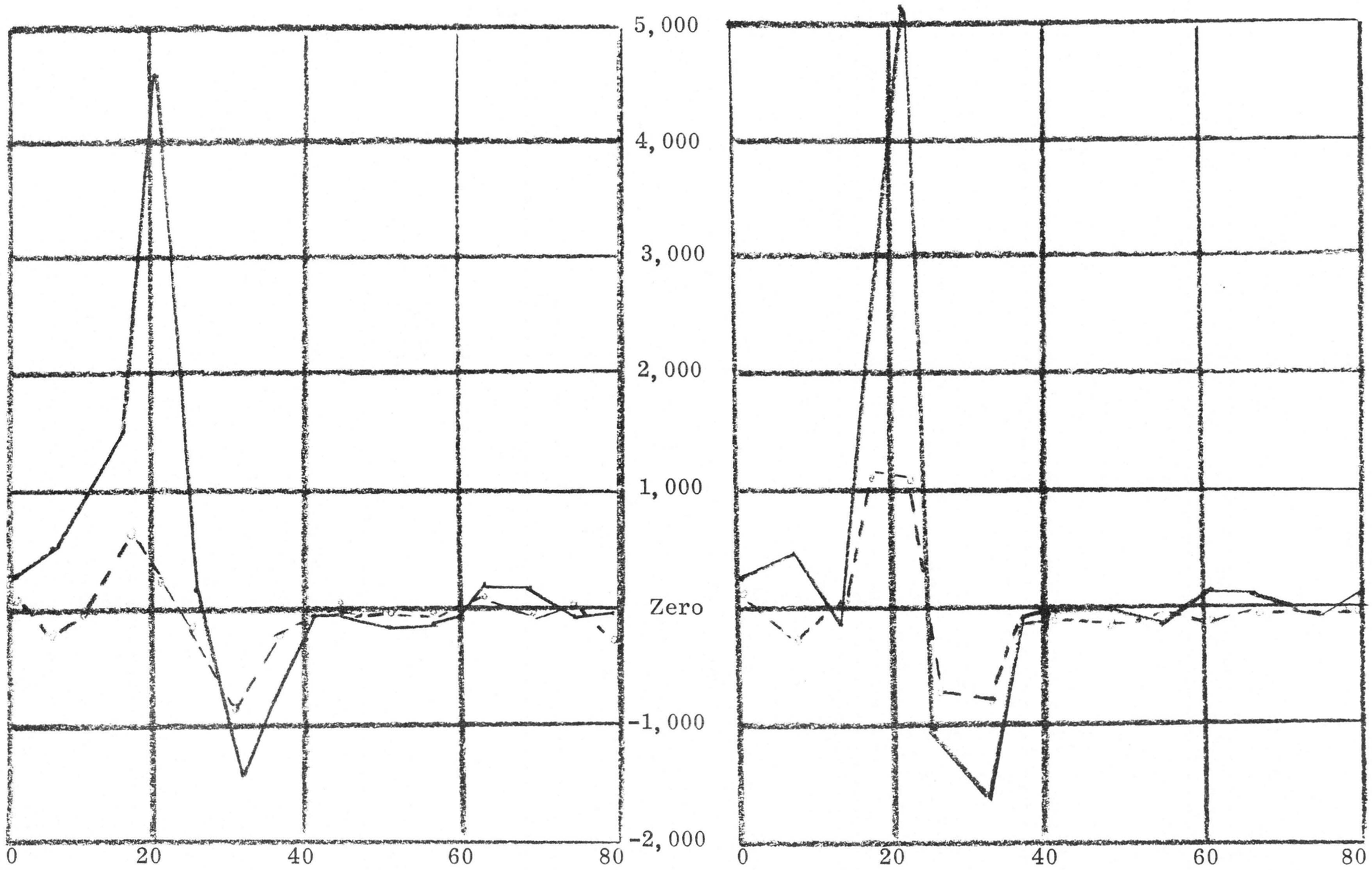

Figure 5: Age Distribution of Migrants to and from the SMSA's by decade; Ogden.

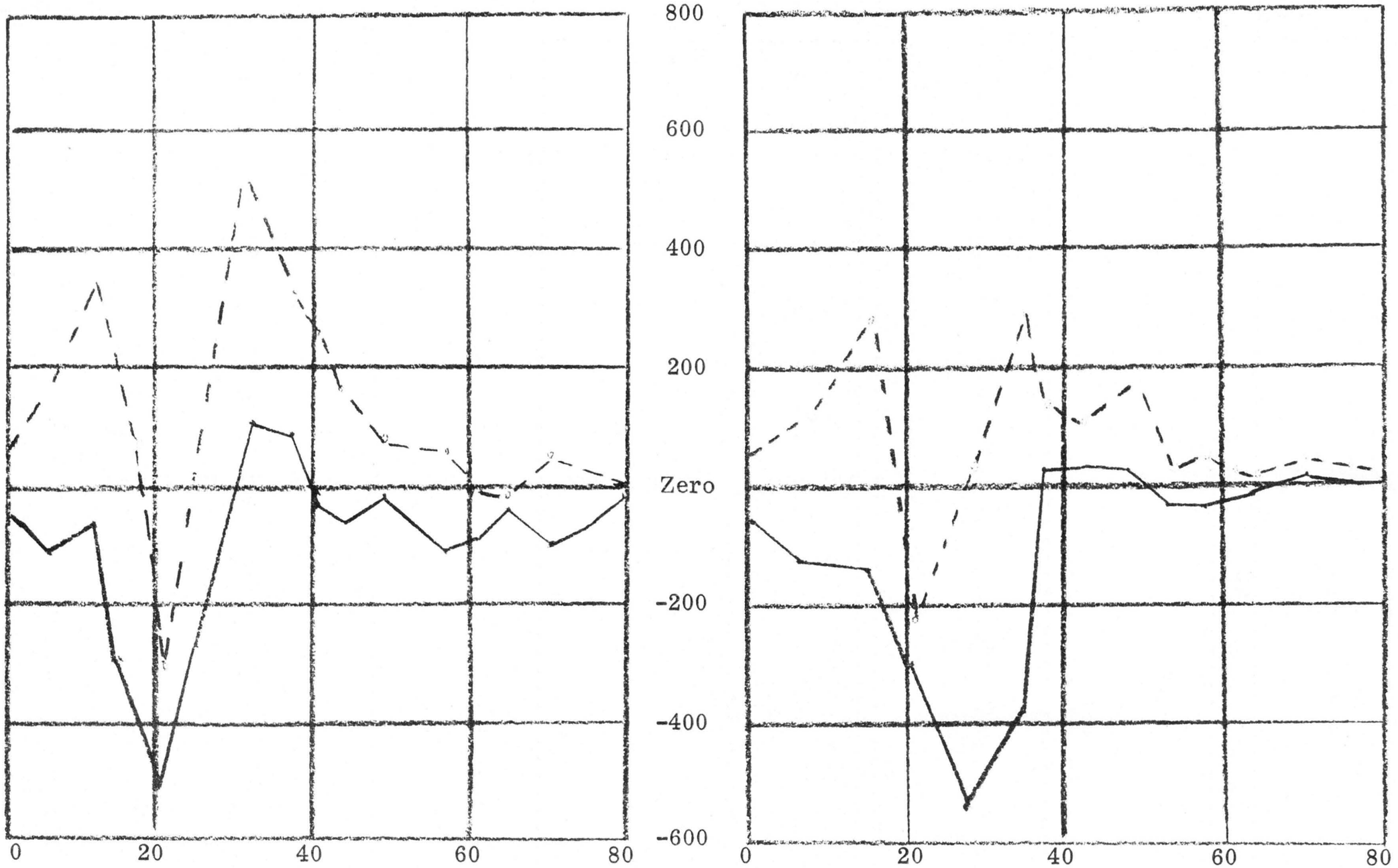

Table 34: Age distribution of the migrants (net) for Salt Lake SMSA population, 1960

Age	Percent of Enumerated Population	Percent of Net-Migrants	Percent of Migrants Inrelation to Base Population
0-4	14.12	4.49	.27
5-9	12.41	11.37	.70
10-14	10.66	8.46	.51
15-19	7.94	7.87	.48
20-24	6.84	18.44	1.12
25-29	6.63	19.40	1.18
30-34	6.50	8.51	.52
35-39	6.35	3.23	.20
40-44	5.73	2.93	.18
45-49	5.02	3.17	.19
50-54	4.46	3.65	.22
55-59	3.73	2.40	.15
60-64	3.17	2.02	.12
65-69	2.57	1.73	.11
70-74	2.01	1.02	.06
75-79	1.37	.68	.04
80-84	.70	.32	.02
85	.39	.31	.02
TOTAL	100.00%	100.00%	5.98%

Table 35: Age distribution of the migrants (net) for the Salt Lake SMSA, 1970

Age	Percent of Enumerated Population	Percent of Net-Migrants	Percent of Migrants In relation to Base Population
0-4	10.82	3.07	.13
5-9	11.54	13.31	.56
10-14	11.82	8.86	.37
15-19	10.36	4.74	.20
20-24	8.36	4.46	.19
25-29	7.26	30.43	1.28
30-34	5.92	18.55	.78
35-39	5.34	6.27	.26
40-44	5.28	2.40	.10
45-49	5.13	1.81	.08
50-54	4.50	1.77	.07
55-59	3.66	1.25	.05
60-64	3.11	.24	.01
65-69	2.36	.31	.01
70-74	1.89	.00	.00
75-79	1.30	.75	.03
80-84	.79	.26	.01
85	.56	.71	.03
TOTAL	100.00%	99.19%	4.16%

Table 36: Age distribution of the migrants (net) for the Ogden SMSA, 1960

Age	Percent of Enumerated Population	Percent of Net-Migrants	Percent of Migrants In relation to Base Population
0-4	13.82	2.00	.07
5-9	12.78	5.51	.20
10-14	10.98	13.70	.49
15-19	8.22	3.04	.11
20-24	5.77	13.22	.47
25-29	5.95	4.48	.16
30-34	6.29	20.99	.75
35-39	6.67	11.51	.41
40-44	6.02	8.32	.30
45-49	5.33	8.75	.31
50-54	4.45	2.98	.11
55-59	3.73	2.76	.10
60-64	3.07	.28	.01
65-69	2.63	.18	.01
70-74	2.03	1.41	.05
75-79	1.25	.02	.00
80-84	.66	.66	.02
85	.35	.20	.01
TOTAL	100.00%	100.00%	3.58%

Table 37: Age distribution of the migrants (net) for the Ogden SMSA, 1970

Age	Percent of Enumerated Population	Percent of Net-Migrants	Percent of Migrants In relation to Base Population
0-4	9.94	2.77	.09
5-9	10.47	7.06	.23
10-14	11.65	6.77	.22
15-19	11.04	14.56	.48
20-24	9.08	27.14	.89
25-29	6.28	16.54	.54
30-34	5.06	7.29	.24
35-39	5.03	4.10	.13
40-44	5.36	.58	.02
45-49	5.61	.87	.03
50-54	5.04	1.70	.06
55-59	4.20	3.47	.11
60-64	3.47	2.63	.09
65-69	2.72	1.00	.03
70-74	2.06	1.72	.06
75-79	1.48	1.02	.03
80-84	.92	.24	.01
85	.59	.58	.01
TOTAL	100.00%	100.00%	3.27%

Table 38: Age distribution of the migrants (net) for the Provo-Orem SMSA 1960

Age	Percent of Enumerated Population	Percent of Net-Migrants	Percent of Migrants In relation to Base Population
0-4	13.90	1.24	.09
5-9	12.57	3.06	.22
10-14	10.57	.77	.06
15-19	10.69	26.78	1.95
20-24	9.14	21.41	1.56
25-29	6.69	11.72	.85
30-34	5.77	19.68	1.43
35-39	5.30	5.81	.42
40-44	5.16	1.97	.14
45-49	4.75	.82	.06
50-54	3.92	.91	.07
55-59	3.20	1.09	.08
60-64	2.57	1.15	.08
65-69	2.13	.20	.01
70-74	1.65	.13	.01
75-79	1.09	.38	.02
80-84	.57	2.71	.20
85	.33	.14	.01
TOTAL	100.00%	99.97*	7.26

*Does not add up to 100% for errors in rounding

Table 39: Age distribution of the migrants (net) for the Provo-Orem SMSA, 1970

Age	Percent of Enumerated Population	Percent of Net-Migrants	Percent of Migrants In relation to Base Population
0-4	10.93	2.85	.44
5-9	9.73	4.00	.62
10-14	10.43	.86	.13
15-19	13.24	20.65	3.22
20-24	15.69	46.16	7.19
25-29	7.18	4.38	.68
30-34	4.57	14.08	2.19
35-39	4.22	4.14	.64
40-44	4.26	.56	.09
45-49	3.94	.16	.02
50-54	3.78	.59	.09
55-59	3.34	.42	.06
60-64	2.76	.06	.01
65-69	2.15	.42	.07
70-74	1.62	.28	.04
75-79	1.06	.21	.03
80-84	.67	.05	.01
85	.43	.13	.02
TOTAL	100.00%	100.00%	15.55%

As can be seen from the preceding tables, the bulk of the migrants fall into the younger age groups of 20-34 years. The second column of tables 34 through 39 shows the distribution of the base population by 5-year age groups. Column three shows the age distribution of the migrants. The impact of migrants in these age groups, 20-44 years, is better understood by viewing the fourth column of the above tables. The percentages in this column demonstrate the impact of the migrants upon the age structure of the SMSA populations. Whether the net migration be positive or negative, the proportions that affect the age composition of the area leave their mark upon the total demographic structure of that population. It is interesting to note that most studies of net intercensal migration in the United States have also demonstrated that the bulk of the migrants are in the age group 20-34 years. For example, Ann R. Miller's study of Net Intercensal Migration to Large Urban Areas of the United States, 1930-1960, demonstrates this pattern.[81] Her study shows that for the period 1930 to 1960, the age group containing the largest amount of net migrants is that of 20-34 years. Lee also shows that age group 15-24 years and 25-44 years have the largest proportion of migrants in the United States, as well as Utah, between 1880 and 1950.[82] Also, Shryock, in his study of Population Mobility Within the United States indicates;

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[81]Ann R. Miller, Net Intercensal Migration to Large Urban Areas of the United States, 1930-40, 1940-50, 1950-60. Philadelphia: University of Pennsylvania, Technical Report #4. p. 9.

[82]E. S. Lee, Population Redistribution and..., op. cit. p. 212.

> ...the first trough comes around age 14 or 15. This is near the end of the compulsory school-attendance period in many states and too young an age for a full time job. The sharpest rise in the mobility rate appears to occur between ages 17 and 18...the peak rate occurs within the age group 20-24...[83]

A similar pattern of age differential among the migrants is also detected for Canada, based upon the 1961 Census of Dominion Bureau of Statistics.[84]

Economic reasons are perhaps atop the reasons for such high rates of migration among the youth. The data presented in tables 34 through 39 is demonstrative of similar patterns for all of Utah's SMSA's. The location of three major universities in Salt Lake City, Ogden, and Provo also contributes to the higher rates of in-migration of the youth to or from these areas. The urban trends of population redistribution in Utah SMSA's follow the United States' patterns in general. Donald J. Bogue, in his study of the components of population change in the United States for 1940-50, indicated:

> ...the net in-migrants to metropolitan areas had the typical age distribution of migrants. They tended to be heavily concentrated in ages 20-24 and 25-29. (Since this was their age in 1950, the median age of migrants at the time of migration is much younger than the figures indicate...) Then the median age of the migrants was about 21 years at the time of migration.[85]

The significance of age differentials will be further illustrated in relation to economic growth. However, from a demographic point of view, the following tables summarize the number of net migrants by age for each SMSA for the past two decades.

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[83]Henry S. Shryock, Population Mobility..., op. cit. p. 352.

[84]M. V. George, Internal Migration in Canada, Ottawa, Canada: Dominion Bureau of Statistics. 1970. p. 38.

[85]Donald J. Bogue, Components of Population Change..., op cit. p. 34.

Tables 40, 41, and 42, demonstrate changes due to net migration in each age group of the SMSA's between the 1950-60 and the 1960-70 period. These tables are indicative of the impact which migrants have had upon the growth in each age group of the SMSA population.

One of the specific problems stated earlier (p. 31) was that: "Most migrants are in the younger age groups, i.e. age group 20-34 years." This statement is supported through the estimates of net migrants of age in this study.

Characteristics of the Migrants: Sex Differentials

Students of internal migration have long assumed that the females migrate more than the males. Ravenstein held this female selectivity as a law of migration.[86] However, the sex differentials do not seem to follow a distinct pattern as Ravenstein suggested. As Thomas had pointed out, there is a tendency for the females to outnumber the males in the migrating population, but this is subject to the specific regions and varies to a great extent.[87]

More recent studies, such as Shryock's, however, point to male selectivity among migrants.

> In population of all ages combined, males have a slightly, but persistently, higher rate of mobility than females... Over 11 consecutive years in the Current Population Survey, the total mobility rate has averaged about 2 percent lower for females than for males.[88]

He goes on to point out that according to the 1950 census of population, movers were distributed by sex as follows:[89]

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[86]W. G. Ravenstein, "The Laws of Migration...", op. cit. p. 199.

[87]D. S. Thomas, Research Memorandum, op. cit., pp. 55-60.

[88]Henry S. Shryock, Population Mobility, op. cit. p. 347.

[89]Ibid.

Table 40: Changes in population of Salt Lake SMSA due to net migration by age groups.

	1950-60		1960-70	
Age	Net Migration	Percent Change Due to Net Migration	Net Migration	Percent Change Due to Net Migration
0-4	1,218	6.64	722	14.92
5-9	3,084	15.75	3,128	44.69
10-14	2,298	13.70	2,083	10.49
15-19	2,134	20.96	-1,113	-4.94
20-24	5,007	142.73	-1,048	-6.32
25-29	5,268	306.63	7,156	68.89
30-34	2,310	60.79	4,359	135.84
35-39	873	15.48	1,472	273.10
40-44	797	15.84	564	14.75
45-49	861	17.74	426	6.31
50-54	990	31.92	416	6.85
55-59	653	19.21	293	6.25
60-64	553	19.86	56	1.38
65-69	471	22.11	- 73	-3.03
70-74	277	11.22	0	0.00
75-79			170	10.69
80-84	274	8.55	60	4.01
85 +	85	13.33	167	10.95
TOTAL	27,150	25.14	18,838	17.15

Table 41: Changes in population of Provo-Orem SMSA due to net Migration by age groups

	1950-60		1960-70	
Age	Net Migration	Percent Change Due to Net Migration	Migration	Percent Change Due to Net Migration
0-4	97	2.66	612	312.24
5-9	- 239	- 5.71	- 861	320.00
10-14	- 60	- 1.77	- 185	- 6.01
15-19	2,089	61.99	4,431	65.13
20-24	1,670	81.54	9,912	83.63
25-29	- 914	- 95.91	- 941	-40.85
30-34	-1,535	-296.90	-3,024	-162.00
35-39	- 453	-105.34	- 888	-648.17
40-44	- 154	- 14.76	- 121	- 35.28
45-49	- 72	- 5.21	- 34	- 12.49
50-54	- 71	- 7.02	- 126	- 12.49
55-59	- 85	- 10.64	- 90	- 7.63
60-64	- 90	- 16.92	- 13	- 1.23
65-69	16	3.53	91	13.33
70-74	- 20	- 3.54	- 61	13.26
75-79			- 43	- 14.83
80-84	- 211	- 34.31	10	3.18
85+	11	7.64	- 29	- 12.29
TOTAL	- 21	- 0.08	10,484	34.09

Table 42: Changes in Population of Ogden SMSA due to net migration by age groups

Age	1950-60 Net Migration	1950-60 Percent Change Due to Net Migration	1960-70 Net Migration	1960-70 Percent Change Due to Net Migration
0-4	- 79	2.05	- 114	4.73
5-9	218	4.14	- 291	31.19
10-14	542	10.73	- 279	-10.94
15-19	120	4.69	- 600	-12.40
20-24	- 523	-220.67	- 1,118	-22.04
25-29	177	42.75	- 681	-50.41
30-34	830	127.89	300	52.26
35-39	445	26.18	169	16.36
40-44	339	20.55	24	21.63
45-49	346	20.92	- 36	- 3.06
50-54	118	10.52	- 70	- 4.89
55-59	109	14.45	- 143	-12.26
60-64	11	1.73	- 108	-11.11
65-69	7	.89	- 40	- 7.62
70-74	55	6.72	- 71	-19.72
75-79			- 42	- 8.62
80-84	26	3.09	10	2.33
85 +	8	5.48	24	6.56
TOTAL	2,907	10.56	- 3,066	-19.73

	Male	Female
Intercounty	65.8%	67.6%
Intercounty but interstate	17.8%	17.6%
Between contiguous states	6.5%	6.3%
Between noncontiguous states	9.8%	8.6%

In viewing the sex differentials of the migrants for Utah's SMSA's between 1950 and 1960, the female selectivity seems not to be the rule. Females outnumber males in select age groups, but as data pertaining to total net in- or out-migration indicates (tables 19, 20, and 21), only in Salt Lake area have females outnumbered the males. Both Ogden and Provo-Orem metropolitan areas show a total net-migration greater for males than for females. The case of Ogden is rather interesting, for males not only exceed females in total numbers of migrants, they almost outnumber them two to one.

The following figures summarize the sex differentials of the migrants for 1950-60:

Area	Total Male Net-Migrants	Total female Net-migrants
Salt Lake SMSA	12,237	13,910
Provo-Orem SMSA	- 524	503
Ogden SMSA	1,818	1,089

Source: Tables 19, 20 and 21.

An important point needs to be mentioned at this time regarding the sex differentials. Although the sex differentials seem to be rather mixed, the female in-migrants seem to substantiate their selectivity. For example, in the case of Provo-Orem SMSA males tended to leave this SMSA while females moved into the

Provo-Orem area in larger numbers. This selectivity, in view of urbanization is significant as this process certainly affects the metropolitan sex ratio. Again, the location of Brigham Young University in Provo, and the low sex ratio of the students there are, perhaps, the reasons for the high in-migration of females to this SMSA.

The estimates of net migration for the same period by the life table survival ratio method tends to exaggerate the female selectivity. According to these estimates, the trends with regards to sex selectivity are rather revealing.

Area	Total male Net-migrants	Total female Net-migrants
Salt Lake SMSA	14,738	16,674
Provo-Orem SMSA	489	1,326
Ogden SMSA	2,060	1,132

Source: Tables 25, 26 and 27.

It is interesting to note that Ogden SMSA's net migration processes seem to be dominated by males. This is perhaps due to the location of a defense depot and Hill Air Force Base in the Ogden SMSA.

The patterns of sex differentials of SMSA net migration for 1960 to 1970 is similar to that of the previous decade as far as Provo-Orem SMSA is concerned. However, Ogden demonstrates considerable loss of males and females through net migration. Perhaps such significant out-migration from the Ogden SMSA can be explained by noting the rapid population increase in the Davis County. As indicated earlier, Davis County was added to the Salt Lake City SMSA in 1960. Also, between 1960 and 1970, the population of Davis County increased rather rapidly. The proximity of Davis County to the Ogden SMSA could account somewhat regarding net out-migration patterns evidenced for Ogden SMSA during this decade (See SMSA maps for Utah in the appendix). Salt Lake SMSA received a large number of male

and female migrants. But the sex distribution of the migrants is quite even.

1960-70

Area	Total male Net-migrants	Total female Net-migrants
Salt Lake SMSA	9,544	9,294
Provo-Orem SMSA	4,613	5,874
Ogden SMSA	-1,653	-1,413

Source: Tables 22, 23 and 24

The estimates of net migration for the same period by the life tables survival ratio method follow the same patterns as evidenced in the above figures which are based on the CSR method. Again, the patterns are consistent with the aforementioned process of net migration for the three SMSA's.

1960-70

Area	Total Male Net-migrants	Total Female Net-migrants
Salt Lake SMSA	7,653	8,828
Provo-Orem SMSA	3,286	5,254
Ogden SMSA	-3,022	-1,414

Source: Tables 28, 29, and 30

Components of Population Change and Percent Change Due to Net Migration for the SMSA's

To evidence the impact of net migration upon the population change of each SMSA, the net migration estimates are related to the total change in each age group of the base population. In other words, to understand the significance of net migration, the total population change has to be considered to gain an understanding of the natural changes as well. Tables 43 through 48 demonstrate the population

changes for each SMSA by considering the role of net migration vis-a-vis the natural population growth or reproductive changes.

The estimates based on the census survival ratio method are used in indicating the amount of net migration for each specific SMSA by age. Also, the percentage changes due to net migration and reproductive change are indicated to facilitate better understanding of these processes within the context of population redistribution.

The first three tables (tables 43, 44, and 45), show the components of population change for the 1950-1960 intercensal period. The latter three tables (46, 47, and 48), demonstrate such changes for the decade 1960-1970.

Some patterns of metropolitan population change are apparent from tables 43 through 48. In the first place, the role of migration as a component of change has been significant in the previous two decades. More than 25 percent of Salt Lake SMSA's growth was due to net migration between 1950 and 1960. For the 1960-70 period, net migrants contributed over 17 percent to this SMSA's growth. The Provo-Orem SMSA did not gain through net migration for the 1950-60 decade. However, over 34 percent of this SMSA's growth between 1960 and 1970 was due to net migration. Ogden SMSA's growth due to net migration between 1950 and 1960 was over 10 percent. But there was a net out-migration of over 19 percent for this SMSA between 1960 and 1970 (see figure 6). Considering that 67.5 percent of Utahns lived inside the SMSA's in 1960, and 77.6 percent in 1970, these rates of migration are indicative of a process of population redistribution which is rather substantial.

The amount of net-migration has been the greatest among the younger population aged 20 to 34 years. These young migrants account for most of the change in metropolitan population due to migration.

Table 43: Components of population change due to net migration and reproductive change for Salt Lake SMSA: 1950-1960

Age	Population 1950	Population 1960	Total Change	Natural Change	Net Migration	% Total Change	% Natural Change	% Change due to Net Migration
0-4	35,724	54,077	18,353	17,135	1,218	100.00	93.36	6.64
5-9	27,929	47,510	19,581	16,497	3,084	100.00	84.25	15.75
10-14	21,745	38,521	16,776	14,478	2,298	100.00	86.30	13.70
15-19	20,186	30,369	10,183	8,049	2,134	100.00	79.04	20.96
20-24	22,645	26,153	3,508	- 1,499	5,007	100.00	- 42.73	142.73
25-29	23,700	25,418	1,718	- 3,550	5,268	100.00	-206.63	306.63
30-34	21,113	24,913	3,800	1,490	2,310	100.00	39.21	60.79
35-39	18,716	24,355	5,639	4,766	873	100.00	84.52	15.48
40-44	16,931	21,962	5,031	4,234	797	100.00	84.16	15.84
45-49	14,405	19,257	4,852	3,991	861	100.00	82.26	17.74
50-54	12,990	17,081	4,091	3,101	990	100.00	68.08	31.92
55-59	10,890	14,289	3,399	2,746	653	100.00	80.79	19.21
60-64	9,356	12,140	2,784	2,231	553	100.00	80.14	19.86
65-69	7,720	9,850	2,130	1,659	471	100.00	78.89	22.11
70-74	5,245	7,713	2,468	2,191	277	100.00	88.78	11.22
75-84	4,765	7,933	3,168	2,897	274	100.00	91.45	8.55
85	855	1,494	639	554	85	100.00	86.67	13.33
TOTAL	274,895	383,035	108,140	80,990	27,150	100.00	74.86	25.14

Table 44: Components of population change due to net migration and reproductive change for Provo-Orem SMSA: 1950-1960

Age	Population 1950	Population 1960	Total Change	Natural Change	Net Migration	% Total Change	% Natural Change	% Change due to Net Migration
0-4	11,221	14,871	3,650	3,553	97	100.00	97.34	2.66
5-9	9,258	13,446	4,188	4,427	- 239	100.00	105.71	- 5.71
10-14	7,922	11,314	3,392	3,452	- 60	100.00	101.77	- 1.77
15-19	8,072	11,442	3,370	1,281	2,089	100.00	38.01	61.99
20-24	7,720	9,768	2,048	378	1,670	100.00	18.46	81.54
25-29	6,192	7,145	953	1,867	- 914	100.00	195.91	- 95.91
30-34	5,661	6,178	517	2,052	-1,535	100.00	396.90	-296.90
35-39	5,245	5,675	430	883	- 453	100.00	205.34	-105.34
40-44	4,491	5,521	1,030	1,182	- 154	100.00	114.76	- 14.76
45-49	3,705	5,086	1,381	1,453	- 72	100.00	105.21	- 5.21
50-54	3,186	4,197	1,011	1,082	- 71	100.00	107.72	- 7.02
55-59	2,620	3,419	799	884	- 85	100.00	110.64	- 10.64
60-64	2,218	2,750	532	622	- 90	100.00	116.92	- 16.92
65-69	1,824	2,278	454	438	16	100.00	96.47	3.53
70-74	1,206	1,771	565	585	- 20	100.00	103.54	- 3.54
75-84	1,160	1,775	615	826	- 211	100.00	134.31	- 34.31
85	211	355	144	133	11	100.00	92.36	7.64
TOTAL	81,912	106,991	25,079	25,098	- 21	100.00	100.08	- 0.08

Table 45: Components of population change due to net migration and reproductive change for Ogden SMSA: 1950-1960

Age	Population 1950	Population 1960	Total Change	Natural Change	Net Migration	% Total Change	% Natural Change	% Change due to Net Migration
0-4	11,462	15,309	3,847	3,768	79	100.00	97.95	2.05
5-9	8,886	14,150	5,264	5,046	218	100.00	95.86	4.14
10-14	7,109	12,161	5,052	4,510	542	100.00	89.27	10.73
15-19	6,422	9,101	2,679	2,559	120	100.00	95.31	4.69
20-24	6,153	6,390	237	760	- 523	100.00	320.67	-220.67
25-29	7,000	6,586	- 414	- 591	177	100.00	-142.75	42.75
30-34	6,319	6,968	649	- 181	830	100.00	- 27.89	127.89
35-39	5,653	7,391	1,738	1,283	445	100.00	73.82	26.18
40-44	5,062	6,663	1,601	1,272	329	100.00	79.45	20.55
45-49	4,253	5,906	1,653	1,307	346	100.00	79.08	20.92
50-54	3,808	4,930	1,122	1,004	118	100.00	89.48	10.52
55-59	3,365	4,135	770	661	109	100.00	85.55	14.45
60-64	2,768	3,405	637	626	11	100.00	98.27	1.73
65-69	2,126	2,909	783	776	7	100.00	99.11	.89
70-74	1,425	2,244	819	764	55	100.00	93.28	6.72
75-84	1,271	2,113	842	816	26	100.00	96.91	3.09
85	237	383	146	138	8	100.00	94.52	5.48
TOTAL	83,319	110.744	27,425	24,518	2,907	100.00	89.44	10.56

Table 46: Components of population change due to net migration and reproductive change for Salt Lake SMSA: 1960-1970

Age	Population 1960 (Adjusted)	Population 1970	Total Change	Natural Change	Net Migration	% Total Change	% Natural Change	% Change due to Net Migration
0-4	65,191	60,351	- 4,840	- 5,562	722	100.00	- 114.92	14.92
5-9	57,317	64,315	6,998	3,870	3,128	100.00	55.31	44.69
10-14	46,054	65,911	19,857	17,774	2,083	100.00	89.51	10.49
15-19	35,236	57,779	22,543	23,656	-1,113	100.00	104.94	- 4.94
20-24	30,026	46,595	16,569	17,617	-1,048	100.00	106.32	- 6.32
25-29	30,126	40,513	10,387	3,231	7,156	100.00	31.11	68.89
30-34	29,800	33,009	3,209	- 1,150	4,359	100.00	- 35.84	135.84
35-39	29,243	29,782	539	- 933	1,472	100.00	- 173.10	273.10
40-44	25,564	29,433	3,869	3,305	564	100.00	85.43	14.57
45-49	21,832	28,583	6,751	6,325	426	100.00	93.69	6.31
50-54	19,056	25,129	6,073	5,657	416	100.00	93.15	6.85
55-59	15,740	20,426	4,686	4,393	293	100.00	93.75	6.25
60-64	13,306	17,353	4,047	3,991	56	100.00	98.62	1.38
65-69	10,765	13,171	2,406	2,479	- 73	100.00	103.03	- 3.03
70-74	8,380	10,512	2,132	2,132	0	100.00	100.00	0.00
75-79	5,657	7,248	1,591	1,421	170	100.00	89.31	10.69
80-84	2,889	4,387	1,498	1,438	60	100.00	95.99	4.01
85	1,613	3,138	1,525	1,358	167	100.00	89.05	10.95
TOTAL	447,795	557,635	109,840	91,002	18,838	---	82.85	17.15

Table 47: Components of population change [illegible]
1960-1970

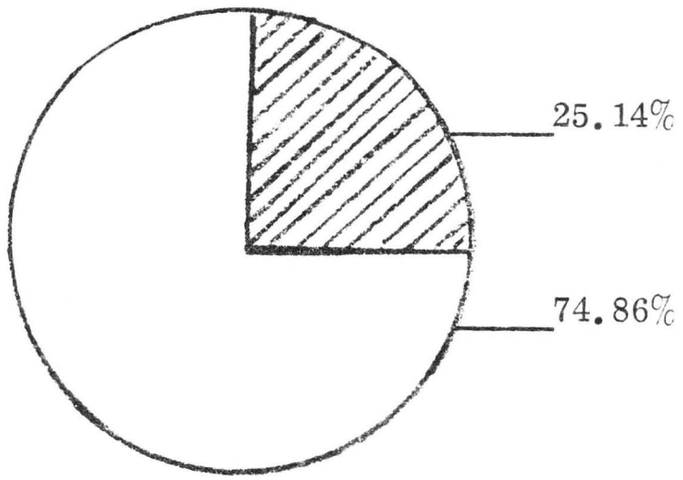
Age	Population 1960	Population 1970	Total Change	Natural Change	Net Migration	% Total Change	% Natural Change	% Change due to Net migration
0-4	14,871	15,067	196	- 416	612	100.00	- 212.24	312.24
5-9	13,446	13,405	- 41	- 902	861	100.00	- 220.00	320.00
10-14	11,314	14,375	3,061	3,246	- 185	100.00	106.01	- 6.01
15-19	11,442	18,245	6,803	2,372	4,431	100.00	34.87	65.13
20-24	9,768	21,620	11,852	1,940	9,912	100.00	16.37	83.63
25-29	7,145	9,889	2,744	3,685	- 941	100.00	140.85	- 40.85
30-34	6,178	6,298	120	3,144	-3,024	100.00	262.00	-162.00
35-39	5,675	5,812	137	1,025	- 888	100.00	748.17	-648.17
40-44	5,521	5,864	343	464	- 121	100.00	135.28	- 35.28
45-49	5,086	5,431	345	379	- 34	100.00	109.85	- 9.85
50-54	4,197	5,206	1,009	1,135	- 126	100.00	112.49	- 12.49
55-59	3,419	4,599	1,180	1,270	- 90	100.00	107.63	- 7.63
60-64	2,750	3,802	1,052	1,065	- 13	100.00	101.23	- 1.23
65-69	2,278	2,961	683	592	91	100.00	86.67	13.33
70-74	1,771	2,231	460	399	61	100.00	86.74	13.26
75-79	1,164	1,454	290	333	- 43	100.00	114.83	- 14.83
80-84	611	926	315	305	10	100.00	96.82	3.18
85	355	591	236	265	- 29	100.00	112.29	- 12.29
TOTAL	106,991	137,776	30,785	20,301	10,484	---	65.93	34.07

Table 48: Components of population change due to net migration and reproductive change for Ogden SMSA: 1960-1970

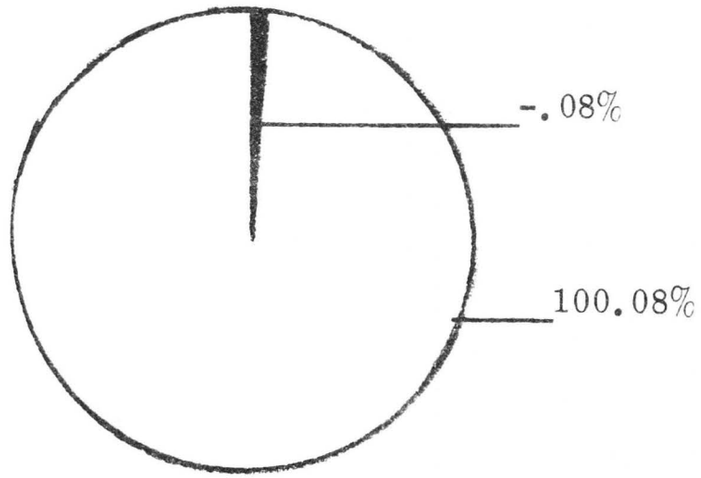
Age	Population 1960	Population 1970	Total Change	Natural Change	Net Migration	% Total Change	% Natural Change	% Change due to Net Migration
0-4	15,309	12,550	-2,759	-2,648	- 114	100.00	95.87	4.73
5-9	14,150	13,217	- 933	- 642	- 291	100.00	68.81	31.19
10-14	12,161	14,710	2,549	2,828	- 279	100.00	110.94	- 10.94
15-19	9,101	13,938	4,837	5,437	- 600	100.00	112.40	- 12.40
20-24	6,390	11,462	5,072	6,190	-1,118	100.00	122.04	- 22.04
25-29	6,586	7,937	1,351	2,032	- 681	100.00	150.41	- 50.41
30-34	6,968	6,394	- 574	- 874	300	100.00	-152.26	52.26
35-39	7,391	6,358	-1,033	-1,202	169	100.00	-116.36	16.36
40-44	6,663	6,774	111	87	24	100.00	78.37	21.63
45-49	5,906	7,081	1,175	1,211	- 36	100.00	103.06	- 3.06
50-54	4,930	6,362	1,432	1,502	- 70	100.00	104.89	- 4.89
55-56	4,135	5,301	1,166	1,309	- 143	100.00	112.26	- 12.26
60-64	3,405	4,377	972	1,080	- 108	100.00	111.11	- 11.11
65-69	2,909	3,434	525	565	- 40	100.00	107.62	- 7.62
70-74	2,244	2,604	360	431	- 71	100.00	119.72	- 19.72
75-79	1,383	1,870	487	529	- 42	100.00	108.62	- 8.62
80-84	730	1,160	430	420	10	100.00	97.67	2.33
85	383	749	366	342	24	100.00	93.44	6.56
TOTAL	110,744	126,278	15,534	18,600	-3,066	---	119.73	- 19.73

Figure 6: Components of Population Change due to Net Migration and Reproductive Change for Utah SMSA's, 1950-60 and 1960-70.

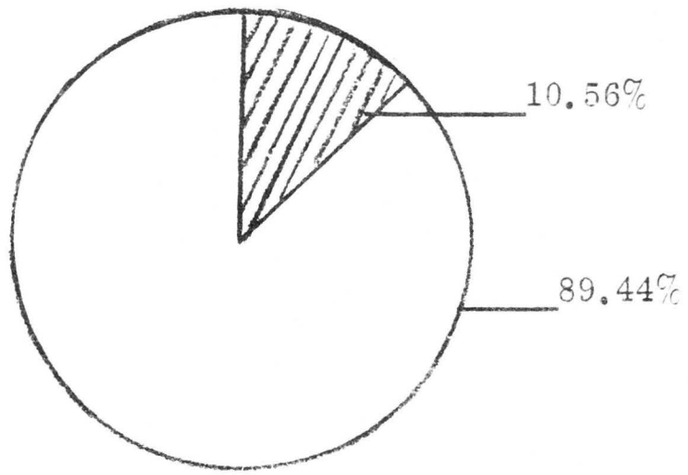
Salt Lake SMSA
1950-60



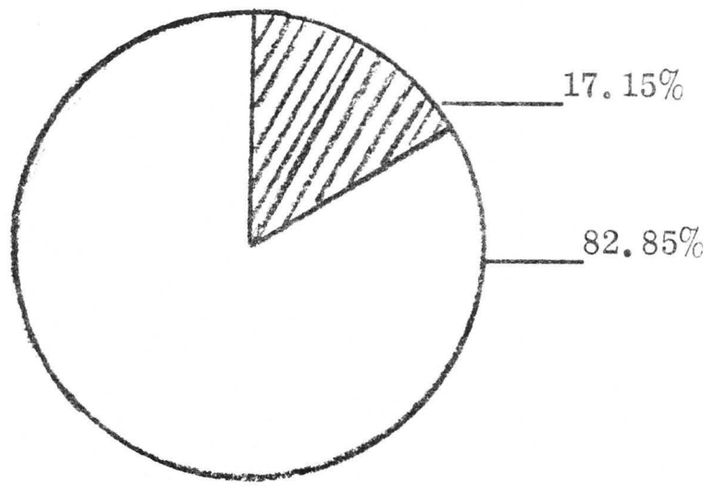
Provo-Orem SMSA
1950-60



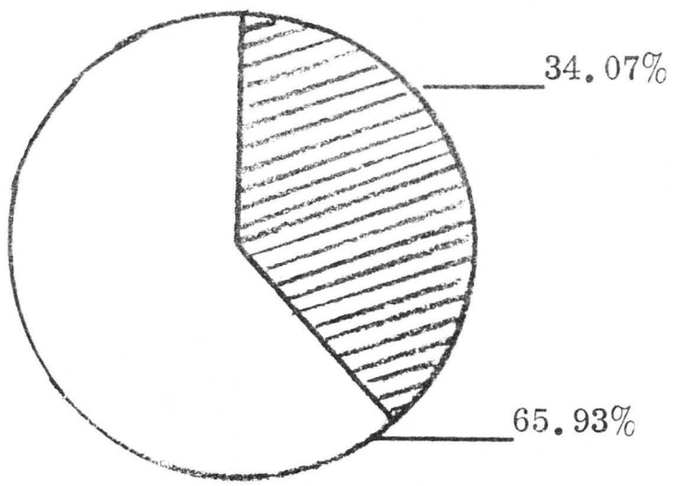
Ogden SMSA
1950-60



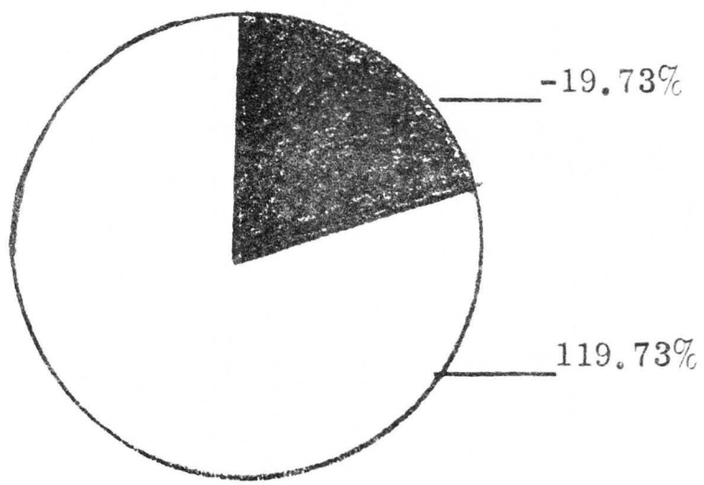
Salt Lake SMSA
1960-70



Provo-Orem SMSA
1950-60



Ogden SMSA
1960-70



Reproductive Change

Change due to net in-migration

Change due to net out-migration

Obviously, a rather significant relationship can be detected regarding the age of the migrants, economic opportunities available in the SMSA, and higher education facilities. The influx of migrants in the younger age groups is indicative of a positive relationship between the aforementioned variables. Nevertheless, the age structure of metropolitan population of Utah is certainly affected by the large number of migrants in the younger age groups.

The over-all impact of population redistribution in Utah, so far as its metropolitan selectivity is concerned, can best be illustrated by viewing the distribution of population per state's land area. While population density per square mile for Utah in 1970 was 12, the picture varies greatly from metropolitan areas to other places. For example, of all counties in Utah that do not contain a metropolitan area, none had a population density over 11 per square mile, except Cache County. But the density for the counties in the SMSA's were 68.4 (Utah County), 333.4 (Davis County), 217 (Weber County), and 600.0 (Salt Lake County).[90] Moreover, the percent change of population between 1960 and 1970 for these four counties was higher than most other counties in the state. Although the state's total population change was 18.9 percent, the above counties demonstrated the following rates of change.[91]

Counties	Percent Change 1960-70
Davis County	52.9%
Utah County	28.8%
Salt Lake County	19.7%
Weber County	14.0%

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[90]1970 Census of Population, Number of Inhabitans; Utah: PC (1) - A46 Utah, April 1971. Table 9. p. 14

[91]Ibid.

Weber County had the lowest change in population of the other SMSA's, primarily due to net out-migration from Ogden SMSA area. However, a decline in population of Weber County and a relatively slow growth in Salt Lake County can be partially explained by a large increase in Davis County population. It seems that the population of all SMSA areas increased, but in Ogden and Salt Lake SMSA areas, the growth of population was more in the Davis County.

By correlating the above figures of population change to estimated net migration for the same areas, the process of redistribution can be better understood:

		1960-70	
SMSA's	Percent Change of Total Population 1960-70	Percent Natural Change	Percent Change due to Net Migration
Ogden	14.0	119.73	- 19.73
Provo-Orem	28.8	65.93	34.07
Salt Lake	24.5	82.85	17.15

Another significant factor regarding the population redistribution is that of sex ratios. As indicated in the estimates of net migration earlier, the females outnumbered the males in most cases. The effect of female selectivity upon the metropolitan areas is evidenced by considering their sex ratios there as opposed to the non-metropolitan ratios. First, the state's sex ratio as a whole has declined from 101.9 in 1950 to 99.8 in 1960 and to 97.6 in 1970.[92] Also, the sex ratio is higher in the non-metropolitan areas of the state. The 1970 sex ratio for metropolitan areas was .96, while it was .99 in the non-metropolitan areas. In Utah, the rural-to-urban migrants during the first sixty years of this century were predominantly female.[93] Thus, the continued

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[92]1970 Census of Population; General Population Characteristics; Utah: PC (1) B46 Utah, August, 1971. p. 33.

[93]K. Mahmoudi, "A Historical Study of..." op. cit. pp. 28-32.

trends of female selectivity among the rural-urban migrants, in addition to the past two decade's patterns of net migration to the SMSA's, are an underlying reason for the lower sex ratios.

In summary, net-migration has continued to be an important component of Utah's metropolitan population change. Most migrants are young, females seem to outnumber males among the in-migrants to the metropolitan areas, and males tend to outnumber females among those who out-migrated from the SMSA's.

Population Redistribution and the Labor Force

The relationship between economic structure and population redistribution has been considered basic in understanding the underlying reasons for population movements. The concepts of "push" and "pull" have often been viewed in the context of desirability or undesirability of an area based on the economic variable.[94] The rural-to-urban movement of populations has been analyzed in relation to loss of employment opportunity due to changes in the economic structure of the rural areas. By the same token, the attractiveness of the city (the pull factor), has been credited to the employment opportunities due to the nature of the occupational and industrial structure. An analysis of the changes in the labor force and the net-migration effects will thus facilitate an understanding of such relationships. Since the population 16 years of age and older constitutes the potential labor force, the discussion of net migrants for each SMSA excludes the estimated net migrants under 15 years and over 65 years of age. Furthermore, it should be stated here that the labor market is sensitive to unemployment rates. As Gallaway suggests: "...if unemployment develops in one region or one industry, the unemployed workers in that market may seek employment elsewhere and an adjustment

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[94] D. J. Bogue, "Internal Migration...", op. cit. p. 496.

process is set in motion.[95] The estimates of net migration to or from the SMSA's should demonstrate a degree of sensitivity to the above principle. Sex differentials of the net migrants are significant as male labor force participation is much greater than the female participation. Also, the population 64 years and older is not used in the following analysis since this age group's labor force participation is at a low level and their numbers in the population is small.

Migrants are also selected in relation to other variables such as education, family status, physical health, intelligence, or occupational differentials.[96] But determination of the relevancy of these factors to the estimates of net migration in this study, due to the nature of the data, is impossible.

Tables 49 and 52 which follow, illustrate the estimates of net migration in the age group 15 to 64 (labor force) for the three SMSA's between 1950-60, and 1960-70.

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[95]Lowell E. Gallaway, Manpower Economics, Homewood, Illinois: Richard D. Irwin, Inc. 1971. p. 2.

[96]See, for example, D. S. Thomas, Research Memorandum, op. cit.

Table 49: Net migration estimates for the labor force population: Utah SMSA's; 1950-1960.

Age	Salt Lake SMSA			Provo-Orem SMSA			Ogden SMSA		
	Male	Female	Total (both sexes)	Male	Female	Total (both sexes)	Male	Female	Total (both sexes)
15-19	817	1,317	2,134	851	1,238	2,089	79	41	120
20-24	2,022	2,985	5,007	483	1,187	1,670	- 298	- 225	- 523
25-29	2,720	2,548	5,268	-188	- 726	- 914	139	38	177
30-34	1,512	798	2,310	-790	- 745	-1,535	555	275	830
35-39	516	357	873	-321	- 132	- 453	297	158	455
40-44	420	377	797	- 94	- 60	- 154	236	93	329
45-49	382	479	861	- 4	- 68	- 72	179	167	346
50-54	470	520	990	- 47	- 24	- 71	92	26	118
55-59	324	329	653	- 37	- 48	- 85	82	27	109
60-64	274	279	553	- 51	- 39	- 90	- 1	12	11
TOTAL	9,457	9,989	19,446	-198	583	385	1,360	612	1,972

Ogden and Salt Lake metropolitan areas demonstrate in migration for most age groups within the labor force. The sensitivity of the labor force to employment opportunities can be tested by comparing the net migration figures and the changes in levels of employment and unemployment during the decade 1950-60. Since Provo-Orem area was not classified as a SMSA until 1960, the following discussion focuses upon Salt Lake and Ogden metropolitan areas only. The following table illustrates the changes in Ogden's labor force between 1950 and 1960.

Table 50: Labor Force composition of employed and unemployed persons: Ogden SMSA, 1950 and 1960.

	1950		1960		Intercensal Change	
	Male	Female	Male	Female	Male	Female
Labor Force	22,933	7,747	28,526	13,162	5,593	4,385
Employed	21,814	7,191	26,892	12,526	5,078	5,335
Unemployed	1,348	553	1,308	631	- 40	78

Source: U.S. Census of Population 1950 and 1960

By comparing the changes in the size of the labor force and the number of employed and unemployed persons, it can be seen that a positive relationship does exist between these changes and the net migration to the SMSA's. The size of the labor force has increased during the decade and so has the employment level for both males and females. Actually, a slight drop in unemployment among the male workers is evidenced in the Ogden SMSA. This is indicative of better employment opportunities.

Changes in the Salt Lake SMSA labor force were as follows:

Table 51: Labor force composition of employed and unemployed persons: Salt Lake SMSA, 1950 and 1960

	1950		1960		Intercensal Change	
	Male	Female	Male	Female	Male	Female
Labor Force	76,319	29,006	97,675	45,529	21,356	16,523
Employed	72,231	27,552	93,967	43,931	21,736	16,379
Unemployed	3,804	1,436	3,213	1,598	- 591	162

Source: U.S. Census of Population 1950 and 1960

The labor force characteristics of Salt Lake SMSA seems to correspond rather closely with that of the Ogden SMSA between 1950 and 1960. There has been an increase in the labor force as well as the employment level. Again, the

Salt Lake metropolitan area shows a drop in unemployed males which suggests somewhat of an increase in the employment opportunities. The size of the female labor force has increased very rapidly for both Ogden and Salt Lake SMSA's. This trend has been evidenced as a whole in the United States. The relatively small increase in the number of females unemployed in both these SMSA's could be attributed to a rapid increase in the size of the female labor force.

The relationship illustrated above between the in-migration estimates and increases in employment for Salt Lake SMSA is consistent with the recent study of employment and population analysis by Nabers and Rasmussen.[97] In comparing levels of employment for Salt Lake metropolitan area, Utah, and the United States, Nabers and Rasmussen show:[98]

	Classified Employment		Growth
	1952	1960	Rate
Salt Lake Metropolitan Area	108,090	141,828	3.5
Utah	241,571	286,432	2.2
United States	55,285.8 (000's)	58,806.7 (000's)	0.8

It is important to note the growth rate of 3.5 for Salt Lake as opposed to 2.2 for Utah in general. This is indicative of a pull factor in relation to employment and in-migration.

The decade 1960-70 represents a slightly changed pattern of net migration for Ogden and Provo-Orem SMSA's. The estimates of net migration for the population 15-64 of the three SMSA's are as follows:

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[97] Lawrence Nabers and Jewell J. Rasmussen, Employment and Population Analysis and Projections: Salt Lake Metropolitan Area, Utah and the United States. Salt Lake City: The Bureau of Economic and Business Research, University of Utah. 1962.

[98] Ibid. p. 55.

Table 52: Net migration estimates for the labor force population: Utah SMSA's; 1960-1970.

Age	Salt Lake SMSA			Provo-Orem SMSA			Ogden SMSA		
	Male	Female	Total (both sexes)	Male	Female	Total (both sexes)	Male	Female	Total (both sexes)
15-19	- 70	-1,043	-1,113	1,458	2,976	4,434	- 323	- 277	- 600
20-24	- 784	- 264	-1,048	4,642	5,270	9,912	- 575	- 543	-1,118
25-29	3,318	3,383	6,701	87	-1,028	- 941	- 301	- 380	- 681
30-34	2,492	1,867	4,359	-1,408	-1,616	-3,024	155	145	300
35-39	873	599	1,472	- 690	- 198	- 888	126	43	169
40-44	299	265	564	- 74	- 47	- 121	- 20	44	24
45-49	243	183	426	- 6	- 28	- 34	- 69	33	- 36
50-54	115	301	416	- 71	- 55	- 126	- 19	- 51	- 70
55-59	183	110	293	- 73	- 20	- 93	- 97	- 46	- 143
60-64	6	50	56	- 28	15	- 13	- 73	- 35	- 108
TOTAL	6,675	5,451	12,126	3,837	5,169	9,006	-1,196	-1,067	-2,263

Salt Lake SMSA shows net in-migration for all age groups but 15-24 years of age. The pattern is exactly reversed for Provo-Orem SMSA where age group 15 to 24 shows a high number of in-migrants while other age categories show net out-migration. Ogden SMSA has a rather mixed process of net migration. All but age groups 30-34 show net out-migration for this SMSA. Actually, Ogden shows a net balance of out-migrants from that SMSA for 1960-70.

The labor force changes, according to the census figures, for the Ogden SMSA between 1960 and 1970 are as follows:

Table 53: Labor force composition of employed and unemployed persons: Ogden SMSA between 1960 and 1970.

	1960		1970		Intercensal Change	
	Male	Female	Male	Female	Male	Female
Labor Force	28,526	13,162	31,575	19,940	3,049	6,778
Employed	26,892	12,526	29,190	18,569	2,298	6,034
Unemployed	1,308	631	1,729	1,329	421	698

Source: U.S. Census of population, Utah: 1960-70

Although the size of the labor force and the number of employed persons increased for Ogden SMSA between the two decades, so did the number of unemployed. In contrast to the 1950-60 decade where the actual number of male unemployment declined for this region, the decade 1960-70 shows increased unemployment. There seems to be a consistency between this change in the unemployment status, as it corresponds to the net out-migration from the area. The full significance of this relationship cannot be determined due to the nature of the data, but the directions of unemployment and out-migration seem to be positive.

The changes in the Salt Lake City labor force were as follows:

Table 54: Labor force composition of employed and unemployed persons: Salt Lake SMSA, 1960 and 1970.

	1960		1970		Intercensal Change	
	Male	Female	Male	Female	Male	Female
Labor Force	97,675	45,529	137,528	79,355	39,928	33,826
Employed	93,967	43,931	129,241	74,968	35,274	31,037
Unemployed	3,213	1,598	5,487	4,308	2,274	2,710

Source: U.S. Census of population, Utah: 1960-70

Although Salt Lake SMSA demonstrates a balance of net in-migrants for this decade, it is significant to note that net out-migration is evidenced for the age

group 15-19 years and 20-24 years. Entering the labor market for the first time, these two age groups can be seen as responding to the employment opportunities more readily than those already employed. The increases in the number of unemployed for this SMSA between 1960 and 1970 is a reversal of the 1950-1960 period. Regarding the younger out-migrants from this SMSA, it could be stated that the higher levels of unemployment were an influencing factor.

The patterns of labor force change for Provo-Orem SMSA were as follows:

Table 55: Labor force composition of employed and unemployed persons: Provo-Orem SMSA, 1960 and 1970.

	1960		1970		Intercensal Change	
	Male	Female	Male	Female	Male	Female
Labor Force	24,894	9,864	31,099	17,529	6,205	7,665
Employed	23,536	9,247	28,961	16,342	5,425	7,095
Unemployed	1,159	606	2,061	1,169	902	563

Source: U.S. Census of Population, Utah: 1960-1970

Provo-Orem SMSA shows a balance of net in-migrants to the area between 1960 and 1970. Of significant importance here is that all age groups within the labor force show a balance of net out-migrants except the first two age groups of 15-19 and 20-24. The sensitivity of this age group to the employment opportunities was discussed in the case of the Salt Lake SMSA. However, an important factor in the Provo-Orem SMSA should be considered. The location of Brigham Young University in Provo, is an influential factor regarding the net in-migration figures to this area for the young age groups. Ages 15-19 and 20-24 contain a number of college students who entered the area during the 10-year period (1960-70). By allowing adjustments for this case, and the evidenced net out-migration of all other age groups, again a relationship between the increases in unemployment and net out-migration is evidenced.

In summary, there seems to be a high relationship between the employment opportunities and net in- or out-migration for the Utah SMSA's. This is congruent with the push and pull factors of migration as discussed by the students of internal migration.

Population Redistribution and Community Transformation

The demographic and economical changes through population redistribution, to be more meaningful, need to be analyzed in the context of the community from a sociological perspective. Regarding the preceeding analyses, the focus of attention has been upon the net migrants of the metropolitan areas. Net migration estimates cannot detect the total movement of populations from an area to another. These estimates demonstrate the balance of all such movements. It is, therefore, obvious that in-so-far as the total migration is considered, the net migration estimates are a gross under-estimation. What seems to be a significant sociological factor is the transplantation of community members. The migrant, finding himself in a new community, differs from the indigenous population. He cannot be regarded just as another member of the community, at least for a period of time. Considering the rather significant proportion of net migrants to and from the SMSA's, certain patterns of "nomadism" seem to emerge. But this modern day nomadism is not quite the same thing as the movements of the nomadic groups of the previous centuries. The nomadic tribes of the past always moved as communities. They took with them the same patterns of social organization; their culture, institutions, and also their basic community functions. However, the high rates of mobility in the United States and in Utah, to be specific, are not of the same nature. "Individual" namadism seems to be the rule at the present. It is not groups that migrate collectively, as was the case earlier, but rather individual families or individuals. By the same token, as migration takes place, it is more of

an individual decision. The mover, although taking his beliefs and experiences with him, confronts a new community upon his arrival. This pattern seems to weaken the community ties, at least, in-so-far as the migrants are concerned. From a theoretical frame of reference, the transition from a gemeinschaft type to a gesellschaft pattern of interaction will certainly have to be attributed to the migrating population. To use Nisbet's classification, the transformation from a communal to a non-communal order is much a consequence of population mobility, i.e. migration.[99]

To the best of the writer's knowledge in reviewing the literature regarding the migrants and the process of migration, the relationship between the factor of migration and community transformation has been ignored. Reference has been made to population growth or urbanization as factors affecting this transformation, but migration and migrants have been largely passed over. One of the very few articles in this respect was printed in the Summer of 1972 issue of the Journal of Extension. James W. Mathews and John F. Thompson, while studying educational activity and community participation as it relates to residential mobility in Alaska, had these concluding remarks:

> The adults in this study (the movers) continued to seek out educational opportunities at all phases of the residential cycle. This wasn't true for the adults' participation in community organization. Here mobility depressed participation in a voluntary organization at both the entering and departing phase of the residential cycle.[100]

Generalizations regarding the impact of the migrants upon the SMSA's are beyond the scope of this study. Nevertheless, the population changes in the metropolitan areas of Utah due to net migration has been significant enough to warrant

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[99]Robert A. Nisbet, The Sociological Tradition, op. cit.

[100]James W. Mathews and John F. Thompson "When People Move...", Journal of Extension, Vol. X, no. 2, Summer, 1972. p. 29-35.

such consideration upon the patterns of organization. The findings regarding the change in SMSA's population due to net migration are as follows:

Table 56: Percent population change due to net migration for Utah SMSA's: 1950-60 and 1960-70.

SMSA's	Percent Change due to Net Migration 1950-60	Percent Change due to Net Migration 1960-70
Salt Lake SMSA	25.14%	17.15%
Provo-Orem SMSA	- .08%	34.07%
Ogden SMSA	10.56%	-19.73%

Source: Tables 43 through 48

SUMMARY AND CONCLUSION

The objectives of this study were: (1) to estimate net migration for the three SMSA's in the State of Utah, (2) to estimate the selected socio-demographic characteristics of the migrants, (3) to demonstrate the effects of population growth due to net migration in contrast to natural growth in the SMSA's of Utah, (4) to estimate the effects of population redistribution upon the population structure and composition of Utah's SMSA's, and (5) to demonstrate the relationship between population change in the SMSA's and economic factors of labor force supply and employment. The primary concern was to focus upon the migrants and assess their impact on the Utah SMSA population. The specific problem was: "Has the growth of Utah's SMSA's in the decades of 1950-60 and 1960-70 been significantly affected by young people, aged 20-34 years, migrating into such areas, and does there exist a relationship between the rate of in-migration and industrial growth of the SMSA's?"

In order to achieve the objectives, the data regarding the age and sex composition of the SMSA population, as enumerated by the United States Bureau of the Census were used. The censuses used were those of 1950, 1960 and 1970.

To estimate the amount of population change due to net migration, indirect methods of net migration estimates were used. The methods were that of the Census Survival Ratio Method and the Life Table Survival Ratio Method. Both methods are based on survival rates which are the complement of mortality rates. For the purpose of analysis, the Census Survival Ratio results were used as this method is more accurate. The Life Table Survival Ratio Method was useful for purposes of checking the accuracy and consistancy of the results. Also, by differencing the net migration estimates derived by the two methods, the impact of interstate migration upon SMSA population growth was measured.

The findings were consistent with the specific problems stated above. To summarize the findings, the five questions asked in this study will be analyzed in lieu of the findings.

Question one: "What role has migration to Utah's metropolitan areas played in the emergence of the SMSA's between 1950 and 1970?"

Between 1950 and 1960, more than one-fourth of Salt Lake SMSA's growth was due to net migration. Ogden SMSA's growth for the same period due to net migration was about 11 percent. However, the effect of net migration on Provo-Orem SMSA was almost nil. There was a net out-migration of .08 percent from this SMSA.

The period 1960 to 1970 indicates a mixed picture. Salt Lake City SMSA's growth for this period due to net migration was about 17 percent. The growth of Provo-Orem SMSA as a consequence of net migration was 34.07 percent. However, there was a net out-migration from Ogden SMSA of 19.73 percent during this decade. By-in-large, the estimates of net migration are indicative of the important role that migration has played in the growth of Utah's SMSA's during the past two decades.

Question two: "Were most migrants in the younger age groups, i.e. 20-34 years?"

An affirmitive answer was fully supported by the findings in this study. The estimates of net migration demonstrated that the net migrants were mostly young and this was consistant throughout the two decades for all three SMSA's.

Question three: "Were most migrants to the SMSA's females, although the sex differential may not be expected to be great?"

Again, an affirmitive answer was substantiated through the findings. The net migration estimates for all but Ogden SMSA showed a higher rate of in-migration

to the SMSA's for the females. In the case of Ogden, males outnumbered the females by almost two to one throughout the 1950-70 period. However, most of Ogden's male migrants were out-migrants. In-migration estimates for the other SMSA's demonstrated a female selectiveness. The long-run effects of this process are evidenced in the SMSA by taking note of the lower sex ratios in these areas in contrast to the non-metropolitan areas of the state.

Question four: "Has the process of population redistribution markedly affected the population structure of Utah's SMSA's during the last two decades?"

The affirmation of this question is based upon the evidence of the large number of young in-migrants to these SMSA's throughout the 1950-70 period. Also, the larger number of female in-migrants to the SMSA's in contrast to males, has been instrumental in affecting the population structure. Thus, the younger population and lower sex ratios found in Utah SMSA's are, to an extent, a consequence of the migration processes.

Question five: "Is there a positive relationship between the in-migration to the SMSA's and the employment opportunities in the SMSA's?"

In comparing the net migration estimates for the labor force population in the SMSA's, it was evidenced that there exists a positive relationship between changes in the employment and net in- or out-migration. This question is, then, answered positively in lieu of the relationship.

This study was meaningful in demonstrating that migration has been an instrumental factor in SMSA population growth of the State of Utah. The study also demonstrated the proportion of SMSA population change due to natural growth. Certain characteristics of the migrants were also distinguished.

An array of questions regarding the characteristics of the migrants, e.g. level of education, occupation, income level, physical and mental abilities or disabilities; emerge as intriguing points of departure in the study of internal migration. To entertain these questions, elaborate data gathering and special surveys become necessary. Nevertheless, the measurement of migration per se constitutes the first step in any such attempts regarding further knowledge of internal migration and the migrants.

Of significant importance is the community in which changes due to migration take place. To better understand the nature of change in the metropolitan populations, a total view of the community is necessary. It remains a yet unexplored realm of inquiry to examine the impact of the migrants upon the social organization of the respective metropolitan communities in this country.

The rather high degree of mobility in the United States, and more specifically, the demonstrated degree of such mobility regarding the metropolitan communities, needs to be explored more fully.

It is hoped that this study will be useful in promoting further research of the impact of the migrants vis-a-vis the patterns of social integration within the contemporary metropolitan areas. Also, it is hoped that this study will enhance the understanding of the components of population redistribution and change in the State of Utah. Future plannings with regards to socio-economic variables and population projections can benefit by utilization of the trend and proportion of the SMSA's net in- or out-migration.

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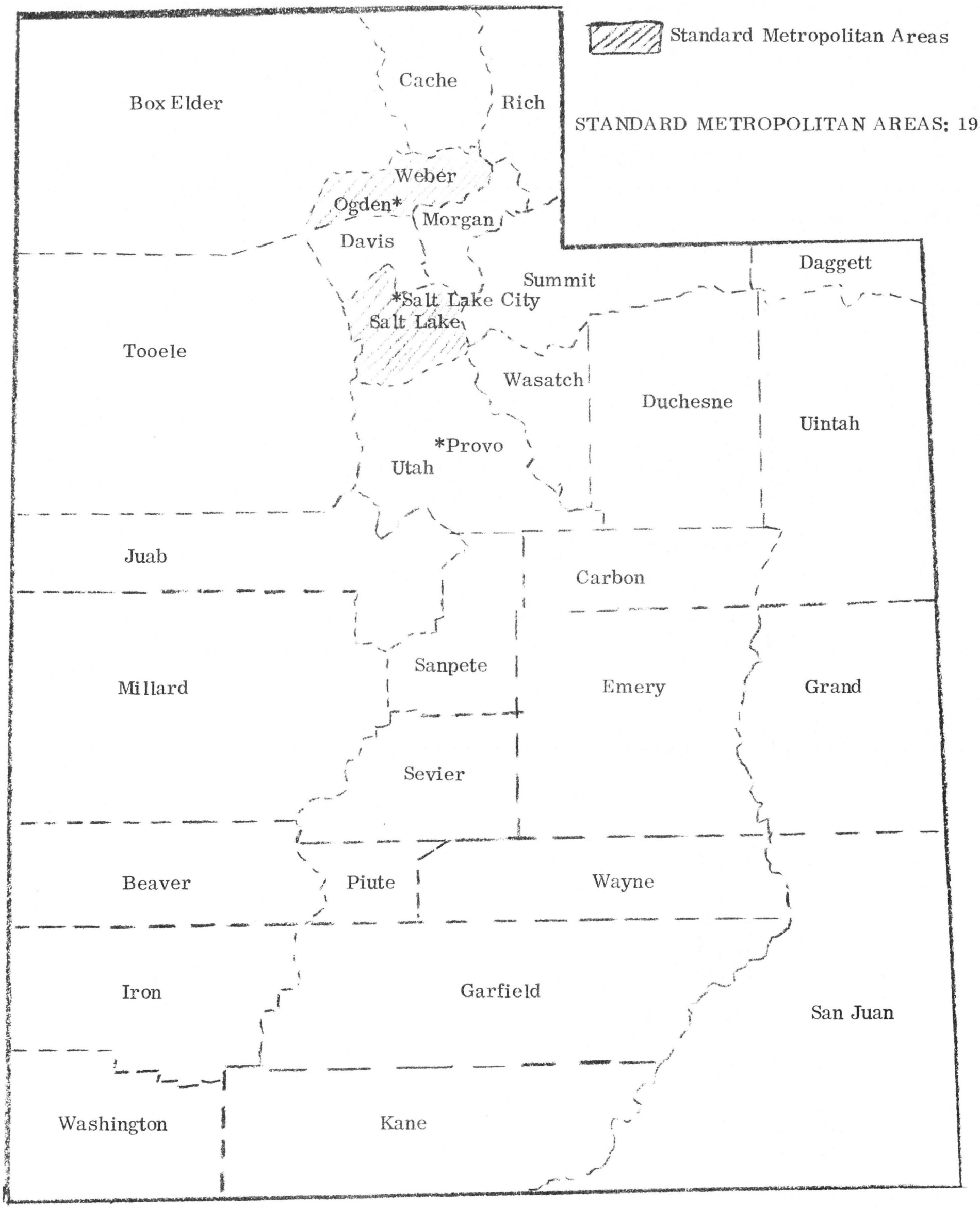
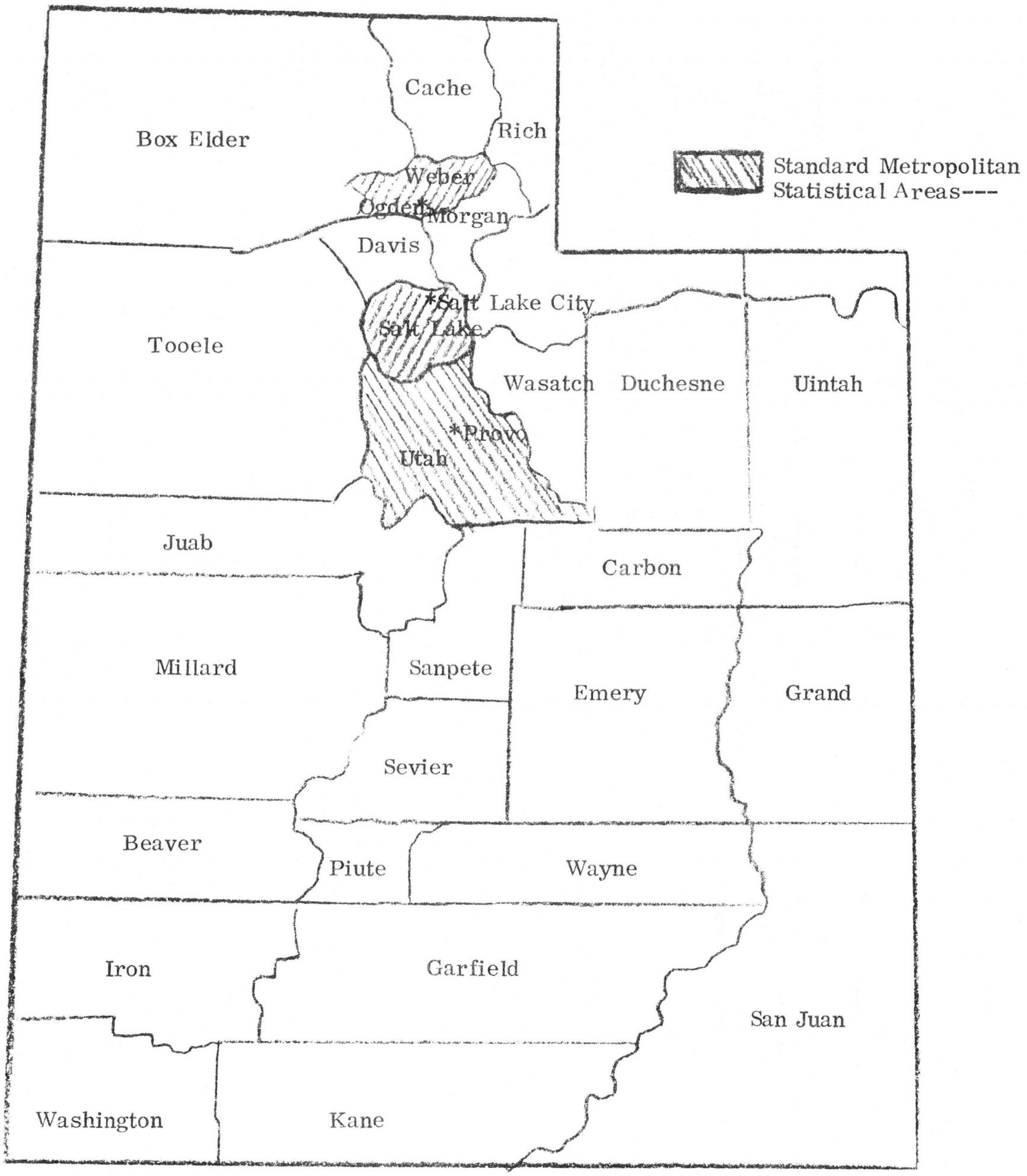
APPENDIX

SMSA Maps for Utah 1950, 1960, 1970

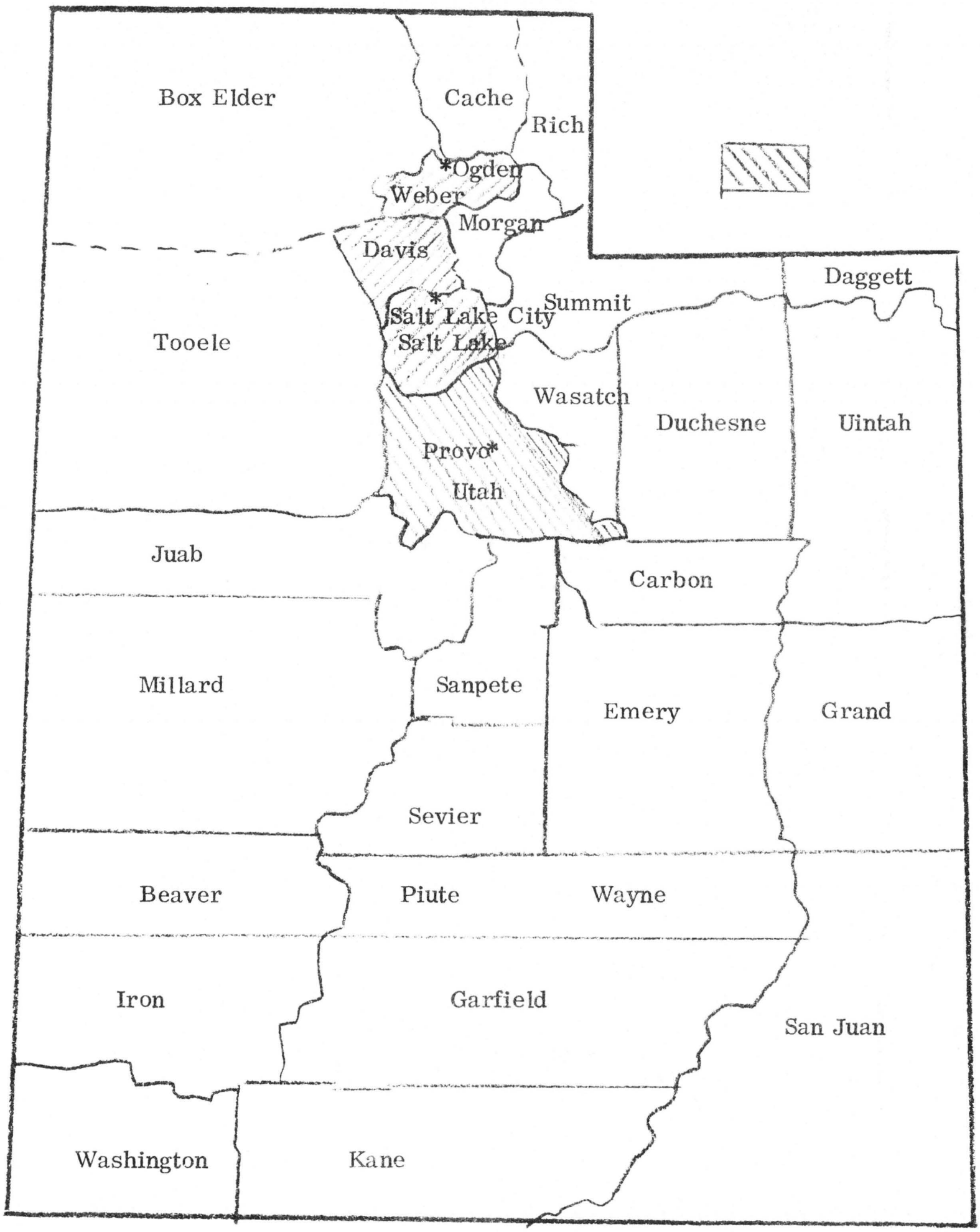
UTAH
(29 counties)



UTAH---COUNTIES, PLACES OF 25,000 OR MORE, AND STANDARD METROPOLITAN STATISTICAL AREAS: 1960



COUNTIES, STANDARD METROPOLITAN STATISTICAL AREAS, AND SELECTED PLACES: 1970



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